

U.S. Application No.
Unknown

International Application No.
PCT/NZ00/00170

ALC20 Rec'd PCT/PTO 28 FEB 2002
107070602
Attorney Docket No.
JAMES61.001APC

Date: February 28, 2002

Page 1

**TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 USC 371**

International Application No.: PCT/NZ00/00170
International Filing Date: August 30, 2000
Priority Date Claimed: August 30, 1999
Title of Invention: ADJUSTABLE ELEVATING TOILET SEAT
Applicant(s) for DO/EO/US: Stuart Earl Crispin Miller

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. (X) This is a **FIRST** submission of items concerning a filing under 35 USC 371.
2. () This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 USC 371.
3. (X) This express request to begin national examination procedures (35 USC 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 USC 371(b) and PCT Articles 22 and 39(1).
4. (X) A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. (X) A copy of the International Application as filed (35 USC 371(c)(2))
 - a) () is transmitted herewith (required only if not transmitted by the International Bureau).
 - b) (X) has been transmitted by the International Bureau.
 - c) () a copy of Form PCT/1B/308 is enclosed.
 - d) () is not required, as the application was filed in the United States Receiving Office (RO/US).
6. () A translation of the International Application into English (35 USC 371(c)(2)).
7. (X) Amendments to the claims of the International Application under PCT Article 19 (35 USC 371(c)(3))
 - a) () are transmitted herewith (required only if not transmitted by the International Bureau).
 - b) (X) have been transmitted by the International Bureau.
 - c) () have not been made; however, the time limit for making such amendments has NOT expired.
 - d) ~~X~~ have not been made and will not be made.
8. () A translation of the amendments to the claims under PCT Article 19 (35 USC 371(c)(3)).
9. () An oath or declaration of the inventor(s) (35 USC 371(c)(4)).
10. (X) A copy of the International Preliminary Examination Report with any annexes thereto, such as any amendments made under PCT Article 34.
11. () A translation of the annexes, such as any amendments made under PCT Article 34, to the International Preliminary Examination Report under PCT Article 36 (35 USC 371(c)(5)).

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12. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
13. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
14. ☒ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A power of attorney and/or address letter.
17. ☒ International Application as published.
18. ☐ The present application qualifies for small entity status under 37 C.F.R. § 1.27.
19. ☒ International Search Report.
20. ☒ A return prepaid postcard.
21. ☒ The following fees are submitted:

| | | | | FEES |
|---|-----------------|-----------------|-------|---------|
| BASIC FEE | | | | \$1,040 |
| CLAIMS | NUMBER FILED | NUMBER EXTRA | RATE | |
| Total Claims | 25 - 20 = | 5 × | \$18 | \$90 |
| Independent Claims | 2 - 3 = | 0 × | \$84 | \$0 |
| Multiple dependent claims(s) (if applicable) | | | \$280 | \$0 |
| TOTAL OF ABOVE CALCULATIONS | | | | \$1,130 |
| Reduction by 1/2 for filing by small entity (if applicable). Verified Small Entity \$ statement must also be filed. (NOTE 37 CFR 1.9, 1.27, 1.28) | | | | |
| TOTAL NATIONAL FEE | | | | \$1,130 |
| TOTAL FEES ENCLOSED | | | | \$1,130 |
| amount to be refunded: | | | | \$0 |
| amount to be charged: | | | | \$0 |

22. ☒ The fee for later submission of the signed oath or declaration set forth in 37 CFR 1.492(e) will be paid upon submission of the declaration.
23. ☒ A check in the amount of \$1,130 to cover the above fees is enclosed.

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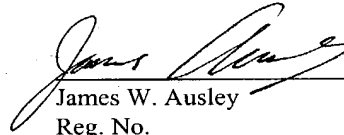
Date: February 28, 2002

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24. ☐ Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40 per property.
25. ☒ The Commissioner is hereby authorized to charge only those additional fees which may be required, now or in the future, to avoid abandonment of the application, or credit any overpayment to Deposit Account No. 11-1410.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:


James W. Ausley
Reg. No.
Customer No. 20,995

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022802

JAMES61.001APC

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | | | |
|----------------|---|----------------------------|---|------------------------|
| Applicant | : | Stuart Earl Crispin Miller |) | Group Art Unit Unknown |
| | | |) | |
| PCT Appl. No.: | : | PCT/NZ00/00170 |) | |
| | | |) | |
| Filed | : | Herewith |) | |
| | | |) | |
| For | : | ADJUSTABLE ELEVATING |) | |
| | | TOILET SEAT |) | |
| | | |) | |
| Examiner | : | Unknown | | |

PRELIMINARY AMENDMENT

United States Patent and Trademark Office
P.O. Box 2327
Arlington, VA 22202

Dear Sir:

Prior to examination on the merits, please amend the above referenced application as follows:

PCT Appl. No.: PCT/NZ00/00170
Filed : Herewith

IN THE SPECIFICATION:

Page 1, immediately after the Title "ADJUSTABLE ELEVATING TOILET SEAT", please insert—

Related Applications

This application claims the benefit of the New Zealand application No. 337475 filed August 30, 1999 and the international application PCT/NZ00/00170 filed August 30, 2000.

Page 7, please amend the paragraph beginning on line 25 to read as "Figure 32 is a plan view from above of a first preferred embodiment of the wheeled chair of the present invention."

PCT Appl. No.: PCT/NZ00/00170
Filed : **Herewith**

IN THE CLAIMS:

Please cancel Claims 4, 20-23, and 25-30 without prejudice.

Please amend the Claims as follows:

1. (Amended) An apparatus for raising and lowering a toilet seat with respect to a toilet bowl, the toilet seat having a hinged lid, the apparatus including:

a support for bearing upon a rim of the toilet bowl, the support having clamps for releasably securing the support to the toilet bowl, the clamps being adjustable both lengthwise and widthwise in a horizontal plane with respect to the rim in order to accommodate toilet bowl rims with varying dimensions;

guides connected between the support and the toilet seat for laterally restraining the seat and allowing the seat to be raised and lowered, the guides including telescoping legs supporting the toilet seat at two or more heights above the toilet bowl; and

a toilet seat lid opening mechanism having a foot lever pivotably connected to the lid for opening thereof, a lid opening detent biased to a holding position for holding the lid in a rotated attitude, and a foot switch to release the detent, wherein the foot lever is slidably connected to a fixed section of the guides.

2. (Amended) The apparatus of Claim 1, wherein the toilet seat lid opening mechanism further includes a hand lever connected to the lid, the hand lever comprising a hand switch adapted to release the lid opening detent.

3. (Amended) The apparatus of Claim 1, wherein the telescoping legs supporting the toilet seat are power actuated.

5. (Amended) The apparatus of Claim 1, wherein the telescoping legs supporting the toilet seat comprise guide detents associated with the guides.

6. (Amended) The apparatus of Claim 1, wherein the telescoping legs supporting the toilet seat are fluid actuated.

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Filed : **Herewith**

7. (Amended) The apparatus of Claim 1, wherein the seat is hingedly and releasably connected to the apparatus.

8. (Amended) The apparatus of Claim 1, wherein the toilet bowl is selected from the group consisting of a fixed toilet bowl and a portable toilet pan.

9. (Amended) The apparatus of Claim 1, wherein the toilet bowl is a portable toilet pan and the apparatus is incorporated into a chair.

10. (Amended) The apparatus of Claim 5, wherein each telescoping leg comprises at least one guide detent, and the apparatus further including one or more levers operable to engage and disengage each guide detent.

11. (Amended) The apparatus of Claim 1, wherein the guide comprises four or five telescoping legs.

12. (Amended) The apparatus of Claim 1, further comprising an insert releasably engageable with the seat, the insert being adapted to conform to the internal shape of the bowl.

13. (Amended) The apparatus of Claim 12, wherein the insert incorporates concertina sides.

14. (Amended) The apparatus of Claim 12, wherein the insert is made from a material comprising at least one of plastics, fiberglass, wood, and metal.

15. (Amended) The apparatus of Claim 1 comprising at least one of steel, plastics, composite materials, aluminum alloys, and wood.

16. (Amended) The apparatus of Claim 1, further including a toilet seat heater.

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Filed : **Herewith**

17. (Amended) The apparatus of Claim 16, wherein the toilet seat heater comprises a thermostatically controlled electrical resistance element.

18. (Amended) The apparatus of Claim 17, wherein the element is operated at a voltage of 12-32 Volts.

19. (Amended) The apparatus of Claim 1, further comprising at least one of:
 at least one arm rest;
 at least one collapsible arm rest;
 a back rest;
 a collapsible back rest;
 a protective skirt arranged about the telescoping legs; and
 a protective skirt arranged about the telescoping legs, the skirt being injection molded from plastic.

24. (Amended) The apparatus of Claim 12, wherein the support further includes pivotable flanged portions on each side of the insert.

Please add the following new claims:

31. (New) A wheeled chair including an apparatus for raising and lowering a seat with respect to the wheeled chair, the apparatus being attached to the wheeled chair and the wheeled chair having a plurality of wheels arranged about and under the apparatus, the seat having a hinged lid, the apparatus comprising:

a support for bearing upon the wheeled chair, the support having clamps for releasably securing the support to the wheeled chair, the clamps being adjustable both lengthwise and widthwise in a horizontal plane with respect to the chair in order to accommodate chairs with varying dimensions;

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Filed : **Herewith**

guides connected between the support and the seat for laterally restraining the seat and allowing the seat to be raised and lowered, the guides including telescoping legs supporting the seat at two or more heights above the chair; and

a seat lid opening mechanism having a foot lever pivotably connected to the lid for opening thereof, a lid opening detent biased to a holding position for holding the lid in a rotated attitude, and a foot switch to release the detent, wherein the foot lever is slidably connected to a fixed section of the guides.

32. (New) The wheeled chair of Claim 31, wherein the chair further comprises a steering mechanism adapted to turn at least one set of the wheels.

33. (New) The wheeled chair of Claim 31, further comprising at least one brake engageable with at least one of the wheels.

34. (New) The wheeled chair of Claim 31, further comprising a power source and a motor operable by a user of the wheeled chair.

35. (New) The wheeled chair of Claim 34, further comprising a clutch cooperating with the motor so as to enable disengagement of the motor by the user.

36. (New) The wheeled chair of Claim 31, further comprising one or two footrests.

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REMARKS

These changes are being made to claim the benefit of previously filed international and New Zealand applications and to bring the subject application into better conformance with U.S. practice. No new matter is being introduced. Entrance of this amendment is respectfully requested. Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 2/28/02

By: James W. Ausley

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Filed : Herewith

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Page 1, immediately after the Title "ADJUSTABLE ELEVATING TOILET SEAT", please insert—

Related Applications

This application claims the benefit of the New Zealand application No. 337475 filed August 30, 1999 and the international application PCT/NZ00/00170 filed August 30, 2000.

Page 7, please amend the paragraph beginning on line 25 to read as "Figure [33] 32 is a plan view from above of a first preferred embodiment of the wheeled chair of the present invention."

PCT Appl. No.: PCT/NZ00/00170
 Filed : Herewith

IN THE CLAIMS:

Please cancel Claims 4, 20-23, and 25-30 without prejudice.

Please amend the Claims as follows:

1. (Amended) An apparatus for raising and lowering a toilet seat with respect to a toilet bowl, the toilet seat having a hinged lid, the apparatus including:

a support for bearing upon a rim of the toilet bowl, the support having clamps for releasably securing the support to the toilet bowl, the [support having means to adjust the position of the] clamps **being adjustable** both lengthwise and widthwise in [the] a horizontal plane with respect to the rim in order to accommodate toilet bowl rims with varying dimensions;

guides connected between the support and the toilet seat for laterally restraining the seat and allowing [it] **the seat** to be raised and lowered, the guides including [means for] **telescoping legs** supporting the toilet seat at two or more heights above the toilet bowl; and

a toilet seat lid opening mechanism having a foot lever [pivotally] **pivotably** connected to the lid for opening thereof, a lid opening detent biased to a holding position for holding the lid in a rotated attitude, and a foot switch to release the detent, wherein the foot lever is slidably connected to a fixed section of [a said] **the** guides.

2. (Amended) [An] **The** apparatus [as claimed in] **of** Claim 1, wherein the [said] toilet seat lid opening mechanism further includes a hand lever connected to the lid, the hand lever **comprising** a hand switch **adapted** to release the [said] lid opening detent.

3. (Amended) [An] **The** apparatus [as claimed in either] **of** Claim 1 [or claim 2], wherein the [means for] **telescoping legs** supporting the toilet seat [is] **are** power actuated.

5. (Amended) [An] **The** apparatus [as claimed in any one of claims 1 to 5] **of Claim 1**, wherein the [said means for] **telescoping legs** supporting the toilet seat comprise[s] guide detents [means] associated with the [said] guides [means].

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6. (Amended) [An] **The** apparatus [as claimed in any one of claims 1 to 5] **of Claim 1**, wherein the [means for] **telescoping legs** supporting the toilet seat [is] **are** fluid actuated.

7. (Amended) [An] **The** apparatus [as claimed in any one of claims 1 to 6] **of Claim 1**, wherein the seat is hingedly and releasably connected to the apparatus.

8. (Amended) [An] **The** apparatus [as claimed in any one of claims 1 to 7] **of Claim 1**, wherein **the** [said] toilet bowl is selected from **the group consisting of** a fixed toilet bowl and a portable toilet pan.

9. (Amended) [An] **The** apparatus [as claimed in any one of claims 1 to 8] **of Claim 1**, wherein **the** [said] toilet bowl is a portable toilet pan and the apparatus is incorporated into a chair.

10. (Amended) [An] **The** apparatus [as claimed in any one of claims 5 to 9] **of Claim 5**, wherein [the guide means comprise telescoping legs,] each **telescoping leg** [having] **comprises at least one** guide detent [means], **and** the apparatus **further** including one or more levers operable to engage and disengage each guide detent [means].

11. (Amended) [An] **The** apparatus [as claimed in any one of claims 4 to 10] **of Claim 1**, wherein the guide [means] comprises four or five telescoping legs.

12. (Amended) [An] **The** apparatus [as claimed in any one of the preceding claims] **of Claim 1**, [wherein said seat] further [includes] **comprising** an insert releasably engageable with the [said] seat, the [said] insert being adapted to conform to the internal shape of the [said] bowl.

13. (Amended) [A height adjustable toilet seat as claimed in] **The apparatus of Claim 12**, wherein the [said] insert incorporates concertina sides.

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14. (Amended) [An] **The** apparatus [as claimed in claim 12 or 13] **of Claim 12**, wherein the [said] insert is made from a material [selected from the group:] **comprising at least one of** plastics, fiberglass, wood, **and** metal [, and a combination thereof].

15. (Amended) [An] **The** apparatus [as claimed in any one of the preceding and made a material selected from:] **of Claim 1 comprising at least one of** steel, plastics, composite materials, aluminum alloys, **and** wood [, and a combination thereof].

16. (Amended) [An] **The** apparatus [as claimed in any one of the preceding claims] **of Claim 1, further** including a toilet seat **heater** [heating means].

17. (Amended) [An] **The** apparatus [as claimed in] **of Claim 16**, wherein the [said heating means] **toilet seat heater** comprises a thermostatically controlled electrical resistance element.

18. (Amended) [An] **The** apparatus [as claimed in] **of Claim 17**, wherein the element is operated at [extra low] **a voltage of [being]** 12-32 Volts.

19. (Amended) [An] **The** apparatus [as claimed in any one of the preceding claims wherein said seat further includes one or more of the following elements] **of Claim 1, further comprising at least one of:**

- at least one** [one or more] arm rest[s];
- at least one collapsible arm rest;**
- a back rest;
- a collapsible back rest; [and]**
- a protective skirt arranged about the telescoping legs; **and**
- a protective skirt arranged about the telescoping legs, the skirt being injection molded from plastic.**

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Filed : **Herewith**

24. (Amended) [An] The apparatus [as claimed in] of Claim [23] 12, wherein [said adjustment means] the support further includes pivotable flanged portions on each side of the insert.

Please add the following new claims:

31. (New) A wheeled chair including an apparatus for raising and lowering a seat with respect to the wheeled chair, the apparatus being attached to the wheeled chair and the wheeled chair having a plurality of wheels arranged about and under the apparatus, the seat having a hinged lid, the apparatus comprising:

a support for bearing upon the wheeled chair, the support having clamps for releasably securing the support to the wheeled chair, the clamps being adjustable both lengthwise and widthwise in a horizontal plane with respect to the chair in order to accommodate chairs with varying dimensions;

guides connected between the support and the seat for laterally restraining the seat and allowing the seat to be raised and lowered, the guides including telescoping legs supporting the seat at two or more heights above the chair; and

a seat lid opening mechanism having a foot lever pivotably connected to the lid for opening thereof, a lid opening detent biased to a holding position for holding the lid in a rotated attitude, and a foot switch to release the detent, wherein the foot lever is slidably connected to a fixed section of the guides.

32. (New) The wheeled chair of Claim 31, wherein the chair further comprises a steering mechanism adapted to turn at least one set of the wheels.

33. (New) The wheeled chair of Claim 31, further comprising at least one brake engageable with at least one of the wheels.

34. (New) The wheeled chair of Claim 31, further comprising a power source and a motor operable by a user of the wheeled chair.

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10/070602

TITLE: ADJUSTABLE ELEVATING TOILET SEAT

TECHNICAL FIELD

The present invention relates to a height-adjustable toilet seat for use by the elderly, the disabled or the handicapped as well as the able bodied. The present invention further relates to chairs and
5 wheeled chairs incorporating a height-adjustable toilet seat.

BACKGROUND ART

Toilet seats are typically formed to a fixed height. Such a height is suitable for the physically able, but is not always suitable for those with limited mobility. Toilet fixtures of an enlarged or elongated
10 bowl are known. However, such higher seats are generally of a less convenient height for mobile persons, or for children in the same household.

Toilet seats in which the base is higher than normal, or in some way elevated, are also known. However, these are normally of a fixed height. Thus, they are again inconvenient for able bodied
users.

15 Removable inserts for seats are also known. In such instances the insert sits on or over the toilet bowl, generally placed in position by insertion into the bowl itself. This has the disadvantages of, firstly, being in the way of the flushing action of the toilet. Secondly, the arrangement does not allow for easy self cleaning of the insert (as is the case with the toilet bowl when it is flushed). Thirdly, whilst the insert can be easily removed, there is no sanitary place for it to be kept, where it is handy
20 for further use, adjacent the toilet.

Toilets with adjustable heights or side rails are known. An example can be seen in US Patent No. 4631759, with the use of side rails and an adjustable grip. US Patent No 5031251 discloses a mechanism connected to the bowl for raising and lowering the rim portion. However the plumbing
25 either needs to be extended for these arrangements or standard toilet seats are required to be modified.

A further disadvantage of some types of arrangements is that they are not easily operated by the disabled or handicapped person wishing to use the toilet.

A still further disadvantage of the above types of seats or toilets with seats is that the upper, elevated position is not adjustable, from user to user.

Commodes of various designs are known. These can include a mobile commode incorporated into a wheeled chair. However, commodes require an in-built toilet seat, and cannot be used in conjunction with a normal toilet.

5 It is an object of the present invention to provide an adjustable toilet seat the height of which may be varied from the normal height to one of a plurality of elevated positions. It is a further object of the present invention to provide a height adjustable toilet seat which can be incorporated into a wheeled chair.

It is a further object of the present invention to address the foregoing problems or at least to provide the public with a useful choice.

10 Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

DISCLOSURE OF INVENTION

15 According to one aspect of the present invention there is provided a height adjustable toilet seat apparatus for use with a toilet bowl, said apparatus including:

a toilet seat;

clamping means for releasably securing said apparatus about the outside of the toilet bowl;

raising or lowering means fixed to the said clamping means and means adapted for laterally restraining the said seat; and

20 means for fixing the said raising or lowering means at a predetermined height.

According to a further aspect of the present invention there is provided a height adjustable toilet seat apparatus as described above wherein the said raising or lowering means includes a plurality of telescoping legs.

25 According to a further aspect of the present invention there is provided a height adjustable toilet set apparatus as described above wherein the said means for fixing the said raising or lowering means comprises detent means associated with the said legs.

According to a further aspect of the present invention there is provided a height adjustable toilet seat apparatus as described above wherein the said raising or lowering means are fluid actuated.

According to another aspect of the present invention there is provided a height adjustable toilet seat apparatus as described above, wherein said seat includes hinging means for releasably securing the seat to the apparatus.

5 According to another aspect of the present invention there is provided a height adjustable toilet seat apparatus as described above, wherein said toilet bowl is selected from: an existing toilet; and a portable toilet pan.

If the toilet is a portable pan, it will be appreciated that the frame work can be incorporated into an ordinary chair with some or all of the seat removed.

10 According to another aspect of the present invention there is provided a height adjustable toilet seat apparatus as described above, wherein said telescoping legs are further inter-connected and operable and the said detent means by a lever to remotely disengage said engaged stops of the legs.

Preferably, the number of legs and holders is selected from four or five. Preferably, said hinging means also releasably secures a lid for the seat to the apparatus.

15 According to another aspect of the present invention there is provided a height adjustable toilet seat apparatus as described above, said seat further includes an insert releasably engageable with said seat wherein the said insert is adapted to conform to the internal shape of the said bowl.

20 Preferably, said insert is of plastics material, fibreglass or metal. Preferably, said apparatus includes a framework capable of supporting the said seat and shaped to fit about or around the top of the bowl and made of a material selected from steel, plastics, aluminium alloy, wood, and a combination thereof.

With these features present it can be seen that the seat can be adjusted with the operation of one lever, making the adjustment of the height easy for a disabled or handicapped user, or an injured person.

25 At the same time the toilet can be used in a normal manner by adjustment of the seat to its lowered position. Thus no special toilet needs to be installed for a person who is injured, disabled or handicapped.

According to another aspect of the present invention, there is provided a height adjustable toilet seat apparatus as described above, in which said seat further includes means to heat said seat. Optionally, the heating means is thermostatically controllable, and is by resistance heating. Optionally the voltage is extra low voltage, between 12 to 24 volts.

30 According to another aspect of the present invention there is provided a height adjustable toilet seat

apparatus as described above, wherein said height adjustable toilet seat further includes elements selected from:

- (a) arm rests;
- (b) a back rest;
- 5 (c) a protective skirt arranged about the telescoping legs; and
- (d) a lever arm for remotely opening and closing a toilet seat cover.

Preferably, the arm rests and/or back rests may be hinged to be hingeable and collapsible when not in use. Optionally also, one or both arm rests may be hinged to lie flat, and may include one or more rollers therein, for assisting a person moving horizontally onto the arm and onto the apparatus.

- 10 Preferably, said lever arm is operable by a hand and / or a foot control.

The arms and back rests can thus be moved quickly and simply out the way, if an able-bodied person so wishes, when using the facilities.

- 15 According to another aspect of the present invention there is provided a height adjustable toilet seat apparatus as described above, wherein said framework includes means to adjust the width of said seat. This permits the apparatus to cater for differing styles of known toilet systems of differing widths.

According to another aspect of the present invention there is provided a height adjustable toilet seat apparatus as described above, wherein said seat includes adjustable flanged portions for use in adapting the apparatus for differing widths of different styles of toilet systems.

- 20 According to another aspect of the present invention there is provided a wheeled chair, said chair including:

- (a) a height adjustable toilet seat apparatus, as described above; and
- (b) a plurality of wheels arranged about and under the apparatus.

- 25 According to another aspect of the present invention there is provided a wheeled chair, said chair further including:

- (c) steering means to turn at least one set of wheels.

According to another aspect of the present invention there is provided a wheeled chair, said chair further including:

(d) means operable to apply a brake to one or more wheels.

According to another aspect of the present invention there is provided a wheeled chair as described above wherein said chair further includes:

(e) a battery and a motor, permitting the wheeled chair to be operated by the user.

5 According to another aspect of the present invention there is provided a wheeled chair, said chair further including:

(f) clutch means permitting the disengagement of the motor whilst said chair is stationary or moving.

Preferably the clutch means is of the ratchet type.

10 According to another aspect of the present invention there is provided a wheeled chair as described above wherein said chair further includes one or two footrests.

Thus, the height adjustment apparatus can be incorporated into a chair for use by a disabled or handicapped person. Thus a special commode, or commode chair is not needed in addition to the above chair. It can also be used as a wheel chair, in the usual way.

15

BRIEF DESCRIPTION OF DRAWINGS

Further aspects of the present invention will become apparent from the following description which is given by way of example only, and with reference to the accompanying drawings in which:

20 Figure 1 is a side view of a first preferred embodiment of the seat apparatus of the present invention in an extended position, with a toilet in outline only;

Figure 2 is a side view of the first preferred embodiment of the seat apparatus of the present invention in a lowered position;

Figure 3 is a front view of the first preferred embodiment of seat apparatus of the present invention in the same position as in Fig. 1;

25 Figure 4 is a front view of the first preferred embodiment of the seat apparatus of the present invention in the same position as in Fig. 2;

Figure 5 is a back view of the first preferred embodiment of the seat apparatus of the present

Figure 19 is a side view of a third preferred embodiment of the seat apparatus of the present invention, in a lowered position;

Figure 20 is a side view of a fourth preferred embodiment of the seat apparatus of the present invention, in an extended position;

5 Figure 21 is a side view of a fourth preferred embodiment of the seat apparatus of the present invention, in a lowered position;

Figure 22 is a plan view from above of the arrangement of part of the support frame of the seat apparatus of the present invention;

10 Figure 23 is a side view of the seat cover lifting mechanism of the seat apparatus of the present invention, with the cover in the closed position;

Figure 24 is a side view of the seat cover lifting mechanism of the seat apparatus of the present invention, with the cover in the open position;

Figures 25a, 25b, 25c and 26a, 26b, 26c show two embodiments of an extension portion of the seat apparatus of the present invention;

15 Figure 27 is a back view of the fifth preferred embodiment of the seat apparatus of the present invention in the same position as in Fig. 1;

Figure 28 is a back view of the fifth preferred embodiment of the seat apparatus of the present invention in the same position as in Fig. 2;

20 Figure 29 is a side view of a first preferred embodiment of the wheeled chair of the present invention;

Figure 30 is a front view of a first preferred embodiment of the wheeled chair of the present invention;

Figure 31 is a back view of a first preferred embodiment of the wheeled chair of the present invention; and

25 Figure 33 is a plan view from above of a first preferred embodiment of the wheeled chair of the present invention.

BEST MODES FOR CARRYING OUT THE INVENTION

Referring to Figs. 1 to 6, a toilet seat apparatus 2, which is capable of height adjustment to a plurality of positions, is thēreshown. The apparatus 2 includes a hinged seat component 3 (of known type),
5 a clamping band 4, five telescoping legs 5, each leg 5 being within a holder 6, and a seat frame 11 (as best shown in Figs. 1 and 2).

The apparatus 2 is associated with a standard, fixed toilet bowl 7 (Figs. 1, 3, and 5) which has a base 8 and in-turned, top edge 9. The plumbing and arrangement of the bowl 7, the base 8, and the top edge 9 are all of known type. The apparatus 2 further includes a hinged lid 19 securable to the frame
10 11 at the back thereof. The hinged securement is of the same type as is known for securement of a hinged seat cover to a known toilet seat.

The clamping band 4 is a metal band, of known type, which is clamped about the top edge 9 to secure the apparatus 2 to the bowl 7. The seat frame 11 is also a metal band of the same general shape and type as the clamping band 4. Preferably these two components, the clamping band 4 and the seat
15 frame 11, sit together in complementary manner when the seat is in the lowered position (of Figs. 2, 4 and 6). If so desired, an additional brace 22 (Figs 5 and 6) across the back of the toilet may be added to the clamping band 4. Such a brace, if used in conjunction with the clamping band 4, may be secured by use of the existing bolt holes (for securement of the lid to the bowl).

Referring to Figs. 1, 3 and 5, each leg 5, which is capable of sliding within the respective holder 6,
20 is secured at the top thereof to the seat frame 11. The respective holder 6 is secured to the clamping band 4 by a rigid flange 12. Optionally the flange 12 includes an additional shoulder 13 at the top to further locate the top of the respective holder 6.

Referring to Figs. 1 to 4, each holder 6 incorporates a plurality of holes 14 evenly spaced along the height thereof. The respective leg 5 includes a detent mechanism comprising a spring loaded pin 15
25 capable of locating in and through each hole 14 depending on the height of the leg 5 relative to the holes 14.

In the embodiment shown the apparatus includes five telescoping legs 5 (and corresponding holders 6): two spaced on opposing sides and one at the front of the bowl 7. However, it will be appreciated that there may be three legs 5, with one positioned at the front of the bowl 7, and two adjacent the
30 rear of the bowl 7, one on each side thereof. Alternatively, there may be four legs 5, (and corresponding holders 6), with the front leg 5 omitted, as is desired.

It will be appreciated that after disengaging the pins 15, the legs 5 may be moved from position to position with ease, thereafter locating and locking in another hole to fix the height of the apparatus 2, until adjustment is again required. While shown as pins 15, the detent means may include other known detent mechanisms such as spring loaded ball bearings, if so desired.

- 5 Thus a disabled person may be able to adjust the height of the apparatus 2 with comparative ease, but also be assured that the apparatus 2 will remain at the chosen height until further adjustment to the legs 5 is made.

Referring to Figs. 1 and 7 to 9, a seat 3 having a removable insert 16 is there shown. The seat 3 includes a top flange 17 which is capable of being supported by the seat frame 11, being raised and
10 lowered therewith. The insert 16 is of a shape complementary to the internal shape of the top 9 of the bowl 7. Alternatively, the insert may be constructed from flexible material in order to conform to the inner shape of a range of different models of toilet bowl 5, it may for example be of a bellows or concertina type construction, thereby providing a continuous connection between the bowl 7 and the seat 3.

- 15 The top flange 17 of the seat 3 further includes a heating coil 21 of known type within the body of the flange 17 or on the underside thereof. The insertion and arrangement of the heating coil 21 can be fashioned in known manner. The coil 21 is connected electrically to a thermostat and on/off controls 20 (Fig. 8, 9), in known manner. The top 17 includes a cover 18 covering the coil 21, in order that the user does not come into contact with the exposed coil 21. Thus, with a known 100 watt
20 heating coil 21, extra low voltage and a known transformer (not shown), the heating coil 21 may be left on thermostatic control. The voltage range is 12 to 24 volts.

The above described apparatus 2 operates as follows:

- The apparatus 2 starts in the lower position (Fig 2, 4 and 6). In this position any insert 16 is either removed or nested within the bowl 7, depending on the shape and size of the insert 16. The lid 19
25 is closed in the normal manner. The legs 5 each fully encased within the respective holder 6, with the pin 15 in the lowermost hole 14 (Fig. 4).

Alternatively, the insert 16 may further include a liner (not shown) of the same general shape as the straight sided insert 16 – The liner may be removable for washing (etc).

- The apparatus 2 is raised to an elevated position by pressing in the pins 15 and pulling the frame 11
30 and the apparatus 2 in an upward direction. The release of the pins 15 is automatic and allows the legs 5 to slide in an upward direction until the pins 15 engage with a hole 14 in a higher position on each respective holder 6. Once all the pins 15 are engaged, the apparatus 2 is retained in an elevated

position. Depending on the height selected, the insert 16 either sits on top of or within the bowl 7. The insert 16 can thus be easily removed for cleaning.

As the lid 19 is hinged to the frame 11, the lid 19 also moves up with the apparatus 2. The lid can be opened in standard manner, and the insert 16 placed so that the top flange 17 rests on the seat
5 frame 11.

It will be appreciated by those skilled in the art, that with a plurality of holes 14, the height to which the apparatus 2 is raised can be selected to suit the user. It will also be appreciated by those skilled in the art that only two or three sets of holes 14 may be needed.

Also, it will be appreciated that the shape of the insert 16 may be adapted so that the insert 16 can
10 remain permanently a part of the apparatus 2, if so desired.

The insert 16 may be of any appropriate material that is easy to keep clean, and with an aesthetically pleasing surface finish. For example the material of the insert 16 may be selected from: plastics materials, fibreglass, metal, and wood, or any combination thereof.

It will further be appreciated that the clamping band 4 can be secured releasably about the bowl 7.
15 Thus, should the height adjustment no longer be needed the apparatus 2 can be removed. A seat and lid of standard type can be re-secured to the bolt holes on the standard toilet bowl 7, in known manner, once the apparatus 2 of the present invention is no longer needed on a longer term basis.

Whilst the above described apparatus 2 has been described with reference to the addition of an insert 16, it will be appreciated that this may be omitted, if so desired. Similarly, if so desired, the heater
20 coil 21 and associated thermostat 20 may be omitted.

Also, it will be appreciated that whilst the invention is described with reference to a fixed, standard type of toilet, the apparatus 2 may be adapted to fit a commode or other type of portable toilet with a bowl, as described below.

Referring to Figures 10 and 11, a variation of the first embodiment of the apparatus 2 is there shown.
25 Like numbered parts refer to the same part as for the first preferred embodiment. In this variation the apparatus 2 is actuated using fluid power. Preferably linear actuators are employed, alternatively other types, such a cushion type actuators may be used. The legs 5 incorporate double-acting rams, the actuation of which is controlled via a manual lever 23, of known type. Optionally, the double acting rams may be replaced by single acting rams.

30 In Figure 10 a side arm 24 is shown in the down position. In Figure 11 the side arm 24 is shown in

the up position. The arm 24 is formed of a "U" channel of steel. However, it will be appreciated that any type of material suitable for an armrest, with or without padding, may be used.

The armrest 24 is hinged at both ends about pivot point 25, in known manner. It will be appreciated that with known types of arrangement, a three-position arm rest 24 may also be incorporated without departing from the scope of the invention. Also illustrated is a toilet roll holder 24a fitted to the arm mounting.

Referring to Figures 12 to 14, the second preferred embodiment of the seat apparatus 22 of the present is thereshown. Like numbered parts refer to the same part as in the first preferred embodiment. The apparatus 22 incorporates a standard commode chair 32 (shown in dotted outline) of known type. The chair commode 32 has front, back, sides and legs, in the ordinary manner.

In this embodiment the insert 16 has a base as well as sides. The telescoping arrangement of the legs and holder (5, 6) works in the same manner as for the second preferred embodiment, except that there are four legs and holders (5, 6) not five of each. Arms 24, operating in the same manner of the first preferred embodiment, are present. These are shown in the drawings but may be optional. The heating element (not shown) and control 23 for controlling the fluid powered linear actuators is also present. In this embodiment the frame 31 incorporates a plurality of strips of metal 36, which engage with a nut and bolt of known type 33 at the top of the telescoping arms and holders (5, 6).

Referring to Figures 14 to 19 these disclose a third preferred embodiment of the apparatus of the present invention 42. Like numbered parts refer to the same part as for the first preferred embodiment.

In this third embodiment the detent means are connected mechanically in order that they can be operated by a single action. Stops 15 within each set of telescoping legs and holders (5, 6) are rigidly connected together by a series of bars 55 (or rigid connecting links). By the operation of the lever handle 56 (Figures 18 and 19) the pins 15 can be pushed mechanically, so that all pins 15 are pushed at the same time. This considerable assists with the raising and lowering of the insert 16 and the seat 3. This is especially so with fingers which are not agile. Mechanical linkages 57 are arranged in known manner to operate from one side of the apparatus 42 to the second side.

In this embodiment of the apparatus 42 there is also shown a skirt 59 (in dotted outline). The skirt is provided to drape and hide the sets of telescoping legs and holders (5, 6) and to act as a protection to the person using the toilet from any hard corners or edges of the apparatus 42. The skirt 59 may be of any appropriate protective material for example; an injection moulded plastic shape of rigid form. Other known materials may be used, as is desired.

It will be appreciated that the hingeable arms 24 of the first preferred embodiment (Figures 11 and 12) may be used to assist this embodiment of the apparatus 42, if so desired.

This embodiment of the apparatus 42 also shows a lengthening strap 60 (Figures 14 and 15), which can be used to adjust the width of the back portion of the apparatus 42. It will be appreciated by those skilled in the art that the width of the back of all styles and designs of toilets is not constant.

With the assistance of straps 60, the rear end of the apparatus 42 may be adjusted in width to accommodate such variations. Also to accommodate such variations the seat 17 of the insert 16 may include flanges 16a hingeable at 17a and movable within a limited range as provided by slots 36 (Figure 8). In this manner the width of the insert 16 and apparatus 42 (or apparatus 2) may be varied to accommodate varying types and styles of toilet bowls 7.

Referring to Figures 20 and 21, a fourth preferred embodiment of the apparatus 62 is thereshown. Like numbered parts refer to the same part as for the first preferred embodiment. In this fourth preferred embodiment the apparatus 62 incorporates the lever arm 56 and arrangement of straps 55 for operation of the pins 15 in the legs and inserts (5, 6). The apparatus 62 includes an insert 36 of the second preferred embodiment. Also shown a hinged back 66, which can fold down flush with the seat cover 3.

The base of the legs and holders (5, 6) incorporate feet 67 having removable pads 167 adapted to enable the apparatus 62 to be rested on the ground or on a chair. The feet 67 are telescopically extendable and may also be readily removed if not required. It will be appreciated that the apparatus 62 is very compact and could also be positioned on a low table or other furniture when needed. It is also well adapted for use in a car, caravan or out-of-doors when camping etc.

Whilst the hingeable back 66 has been shown with reference to the fourth preferred embodiment 62, it will be appreciated that the hinged back 66 may also be used in other embodiments, as is desired.

Preferably the back 66 is from a rigid metal strip, or other known materials appropriate for use for a backing support for a person. It may be padded or not, as is desired.

Referring to Figure 22, the means of clamping the apparatus 2 to a bowl 7 includes slotted members 132 positioned about the periphery of the bowl. Adjustability to accommodate bowls 7 having varying dimensions is provided by way of slots 132a in the members 132 fixed together with nuts and bolts 32b, which can be tightened once the width of the apparatus 62 is adjusted.

Referring to Figures 23 and 24, a mechanism for raising and holding the seat 3 includes a segment 160 about the centre of which the seat 3 is hinged for rotation. A spring-loaded catch 122 engages the segment 160 to prevent rotation thereof, the catch is releasable by the actuation handle 121 of

peddle 124, and thereafter returns to the locked position. A mechanical linkages (of known type) includes sliding shaft 161 which is slidably fixed to collar 125. By operation of this arrangement 120 in known manner the cover or seat lid 3 can be raised and lowered by someone of limited agility by use of hand (lever arm 121) or foot (lever arm 124).

- 5 Figures 25a, 25b, 25c, and 26a, 26b, 26c show two versions of a shield, which can be used in any embodiment of the apparatus (2, 22, 42, 62) in front of the front portion of the insert (16, 36). The shield (90, 100) is shaped to fit about the toilet bowl 7 at the front thereof. Figure 26(a-c) shows non-adjustable shield 90. Figure 27 shows an adjustable shield 100 of two portions (100a and 100b). The two portions are slotted 101 with nuts 102 for adjustability of the overall length of the shield 100.
- 10 Figures 27 and 28 disclose a fifth preferred embodiment of the apparatus 82, which incorporates a curved shield 100 without the insert 16. This embodiment also incorporates the skirt 59 and lever 56 for operation of all pins 15 simultaneously, and the adjustability straps 60. Also included is a lever arm 120 for the toilet seat cover) as shown in Figures 24 and 25 (a-c).

- Referring to Figures 29 to 32, there is there shown a first preferred embodiment of a wheeled chair 15 200 in accordance with the present invention. The wheeled chair 200 incorporates elements of the apparatus (2, 22, 42, 62, 82) in all the embodiments discussed above. Where like numbers are used, like elements are present.

- The chair 200 incorporates an insert 16, five legs 5 and holders 6. A hingeable back 66 and two side arms 224 are present. The side arms 224 incorporate rollers 225 but are otherwise hingeable in like 20 manner as the arms 24. The rollers 225 can be used when the arm 224 is in a horizontal position, to assist the passage of someone from a bed (or the like) to the chair 200. The chair 200 incorporates a series of wheels 201 of known type.

- Referring to Figure 32, the front wheels 202 are steerable by means of a small steering wheel 203 at a height suitable for working by a person sitting in the chair 200. A series of axles 203a operable in 25 known manner permit the transfer of rotation of the steering wheel 203 to the wheels 202 to enable steering of the chair. Footrests 204 can be positioned appropriately either side of the front wheels 202 or above the wheels 202 for keeping the feet out of the way of the wheels 202.

- A battery 210 provides motor power. This can be an appropriate size for running the engine 211 at the rear of the vehicle 200. A series of pulleys 212 and a bevel gear arrangement 213 (Figure 31) 30 transfer power from one side of the chair 200 to the other. This arrangement is required so that the chair 200 can be backed over toilet 7. Thus the adjustability of the height of the chair 200 can be used in conjunction with the toilet 7 so that an adjustable toilet seat is provided within the chair 200.

It will be appreciated however that if the portable insert 36 (with base) is used the gear linkage and drive axle from the pulleys 212 to the second side of the chair 200 may be more direct and need not follow the arrangement shown in Figure 32 for transferring motion in a vertical and horizontal direction, so that the chair clears the toilet 7.

- 5 A brake 214 is used with a series of individual levers in known manner to provide a brake for one wheel 201 or all wheels 201, 202 in known manner. The brake 214 can be of the type that bears against a wheel 201 or 202 and can be used to stop the chair 200, or to anchor it in a desired position.

- Optionally a ratchet clutch of known type may be incorporated into the chair 200. This permits the chair 200 to be stationary, with the motor 212 running; and also permits the wheeling of the chair 200
10 when the motor 212 is not running. At speed controller 220, is shown, operable in known manner.

Whilst the chair 200 has been shown with steering, clutch, motor power, brakes and footrests, it will be appreciate by those skilled in the art that the chair 200 may have any or all of these features, either separately or in combination, as is desired. The degree to which all these features are present will depend in part on the degree of mobility and dexterity of the user.

- 15 Referring to Fig 29, an additional set of telescoping inserts 226 may be added to each telescoping leg and insert (5, 6) to raise the chair 200 clear of the wheels(201,202). This permits the chair 200 to be parked without using the brake 214. Additionally, the chair 200 can be used as a commode, in known manner.

- 20 Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof.

CLAIMS:

1. An apparatus for raising and lowering a toilet seat with respect to a toilet bowl, the toilet seat having a hinged lid, the apparatus including:

 a support for bearing upon a rim of the toilet bowl, the support having clamps for
 5 releasably securing the support to the toilet bowl, the support having means to adjust the position of the clamps both lengthwise and widthwise in the horizontal plane with respect to the rim in order to accommodate toilet bowl rims with varying dimensions;

 guides connected between the support and the toilet seat for laterally restraining the seat and allowing it to be raised and lowered, the guides including means for
 10 supporting the toilet seat at two or more heights above the toilet bowl; and

 a toilet seat lid opening mechanism having a foot lever pivotally connected to the lid for opening thereof, a lid opening detent biased to a holding position for holding the lid in a rotated attitude and a foot switch to release the detent, wherein the foot lever is slidably connected to a fixed section of a said guide.

 15
2. An apparatus as claimed in claim 1 wherein the said toilet seat lid opening mechanism further includes a hand lever connected to the lid, the hand lever a hand switch to release the said lid opening detent.
- 20 3. An apparatus as claimed in either claim 1 or claim 2 wherein the means for supporting the toilet seat is power actuated.
4. An apparatus as claimed in any one of claims 1 to 3 wherein the said guide means includes a plurality of telescoping legs.

25

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5. An apparatus as claimed in any one of claims 1 to 5 wherein the said means for supporting the toilet seat comprises guide detent means associated with the said guide means.
- 5 6. An apparatus as claimed in any one of claims 1 to 5 wherein the means for supporting the toilet seat is fluid actuated.
7. An apparatus as claimed in any one of claims 1 to 6 wherein the seat is hingedly and releasably connected to the apparatus.
- 10 8. An apparatus as claimed in any one of claims 1 to 7 wherein said toilet bowl is selected from a fixed toilet bowl and a portable toilet pan.
- 15 9. An apparatus as claimed in any one of claims 1 to 8 wherein said toilet bowl is a portable toilet pan and the apparatus is incorporated into a chair.
- 20 10. An apparatus as claimed in any one of claims 5 to 9 wherein the guide means comprise telescoping legs, each leg having guide detent means, the apparatus including one or more levers operable to engage and disengage each guide detent means.
11. An apparatus as claimed in any one of claims 4 to 10 wherein the guide means comprises four or five telescoping legs.

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12. An apparatus as claimed in any one of the preceding claims wherein said seat further includes an insert releasably engageable with the said seat, the said insert being adapted to conform to the internal shape of the said bowl.
- 5 13. A height adjustable toilet seat as claimed in claim 12 wherein the said insert incorporates concertina sides.
- 10 14. An apparatus as claimed in claim 12 or 13 wherein the said insert is made from a material selected from the group: plastics, fibreglass, wood, metal, and a combination thereof.
- 15 15. An apparatus as claimed in any one of the preceding and made of a material selected from: steel, plastics, composite materials, aluminium alloys, wood, and a combination thereof.
16. An apparatus as claimed in any one of the preceding claims including toilet seat heating means.
17. An apparatus as claimed in claim 16 wherein the said heating means comprises a thermostatically controlled electrical resistance element.
- 20 18. An apparatus as claimed in claim 17 wherein the element is operated at extra low voltage being 12-32 Volts.
19. An apparatus as claimed in any one of the preceding claims wherein said seat further includes one or more of the following elements:
- one or two arm rests;

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a back rest; and

a protective skirt arranged about the telescoping legs.

5 20. An apparatus as claimed in claim 19 wherein each said arm rest and the back rest are collapsible.

10 21. An apparatus as claimed in either claim 19 or claim 20 wherein one or both arm rests further include one or more rollers operable when the arms are in a planar position with the seat.

22. An apparatus as claimed in any one of claims 19 to 21 wherein said skirt is injection moulded from a plastic.

15 23. An apparatus as claimed in any one of the preceding claims wherein said framework further includes means to adjust both the width and the length thereof.

20 24. An apparatus as claimed in claim 23 wherein said adjustment means for the width and length of the framework further includes pivotable flanged portions on each side of the insert.

25. An apparatus, as claimed in any one of the preceding claims fixed to a wheeled chair, said chair including a plurality of wheels arranged about and under the apparatus.

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26. An apparatus, as claimed in claim 25 wherein said chair further includes steering means to turn at lest one set of wheels.
27. An apparatus, as claimed in either claim 25 or claim 26 wherein said chair further includes means operable to apply a brake to one or more wheels.
28. An apparatus, as claimed in any one of claims 25 to 27 wherein said chair further includes power means and a motor operable by the user.
29. An apparatus, as claimed in claims 28 wherein said chair further includes clutch means permitting the disengagement of the motor.
30. An apparatus, as claimed in any one of claims 25 to 29 where said chair further includes one or two footrests.

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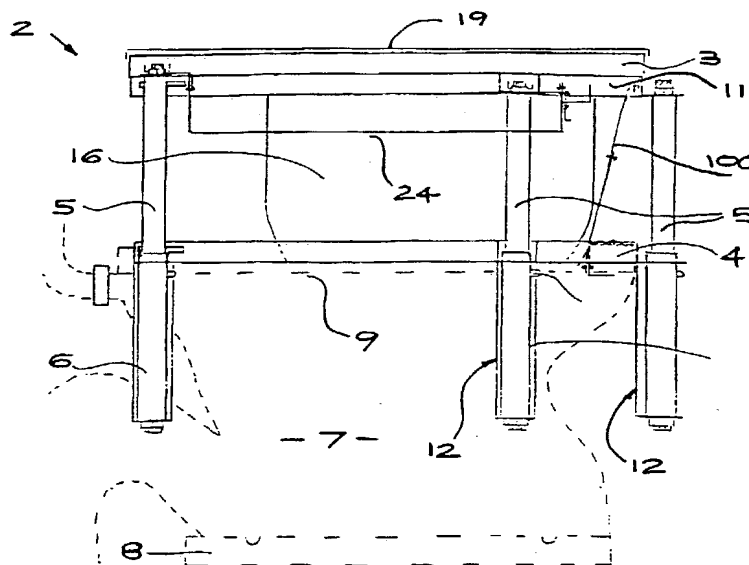
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(54) Title: ADJUSTABLE ELEVATING TOILET SEAT



(57) Abstract: A height adjustable toilet seat apparatus (2, 22, 42, 62, 82) includes a seat (3) and a framework (11) fitted about a toilet bowl (7). The framework (11) includes clamping means (4) for releasably securing the apparatus (2, 22, 42, 62, 82) to the toilet (7) and a frame for the seat (3). The framework (11) includes a number of telescoping legs (5, 6) which can be set at one or more heights from a lowered position. The apparatus (2, 22, 42, 62, 82) can be used for a portable toilet pan (36), in addition to a fixed toilet (7). The apparatus (2, 22, 42, 62, 82) can be incorporated into a chair (32) and a wheeled chair (200), which can also include steering, braking, a clutch and motive means.

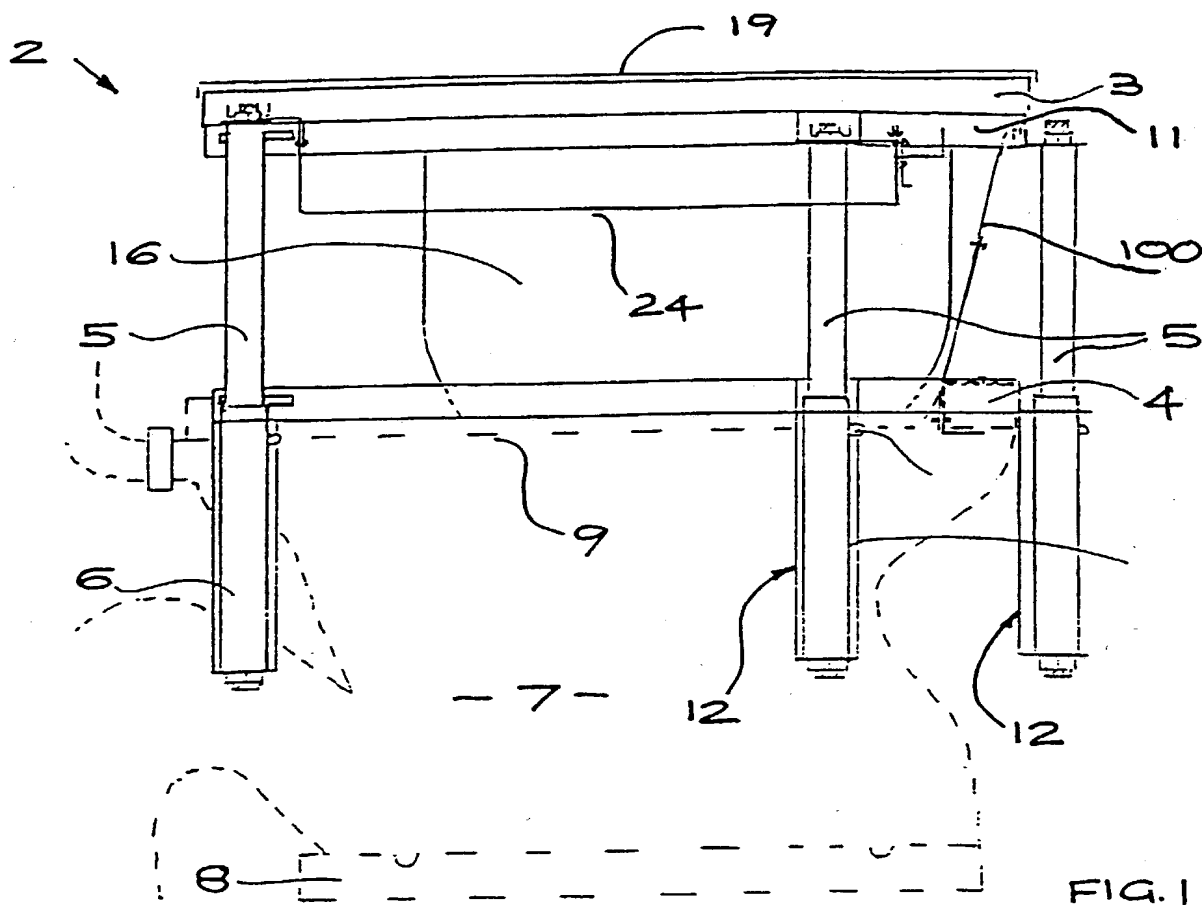


FIG. 1

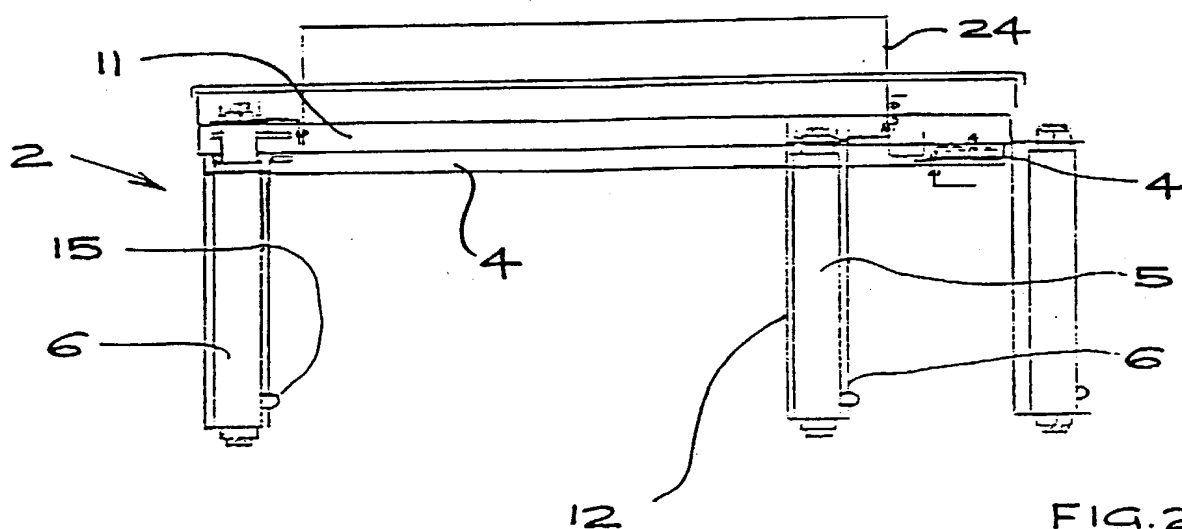
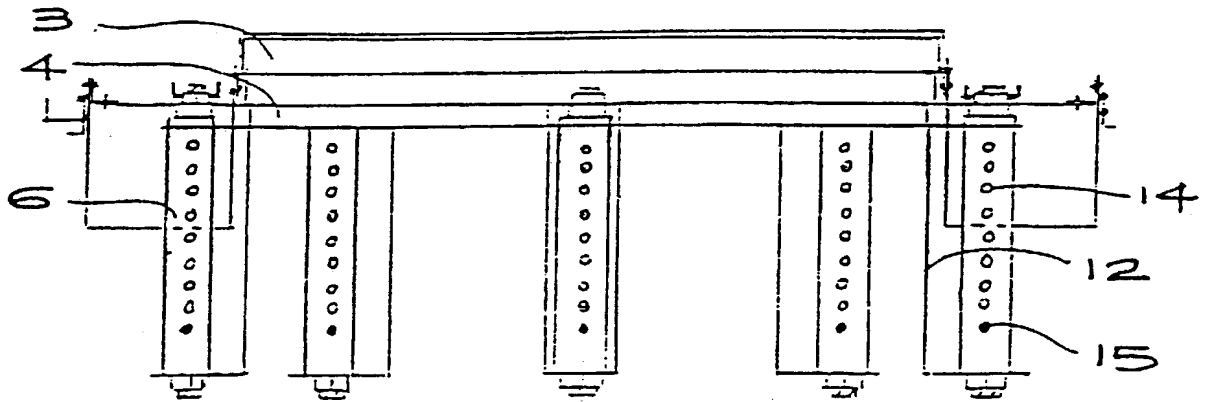
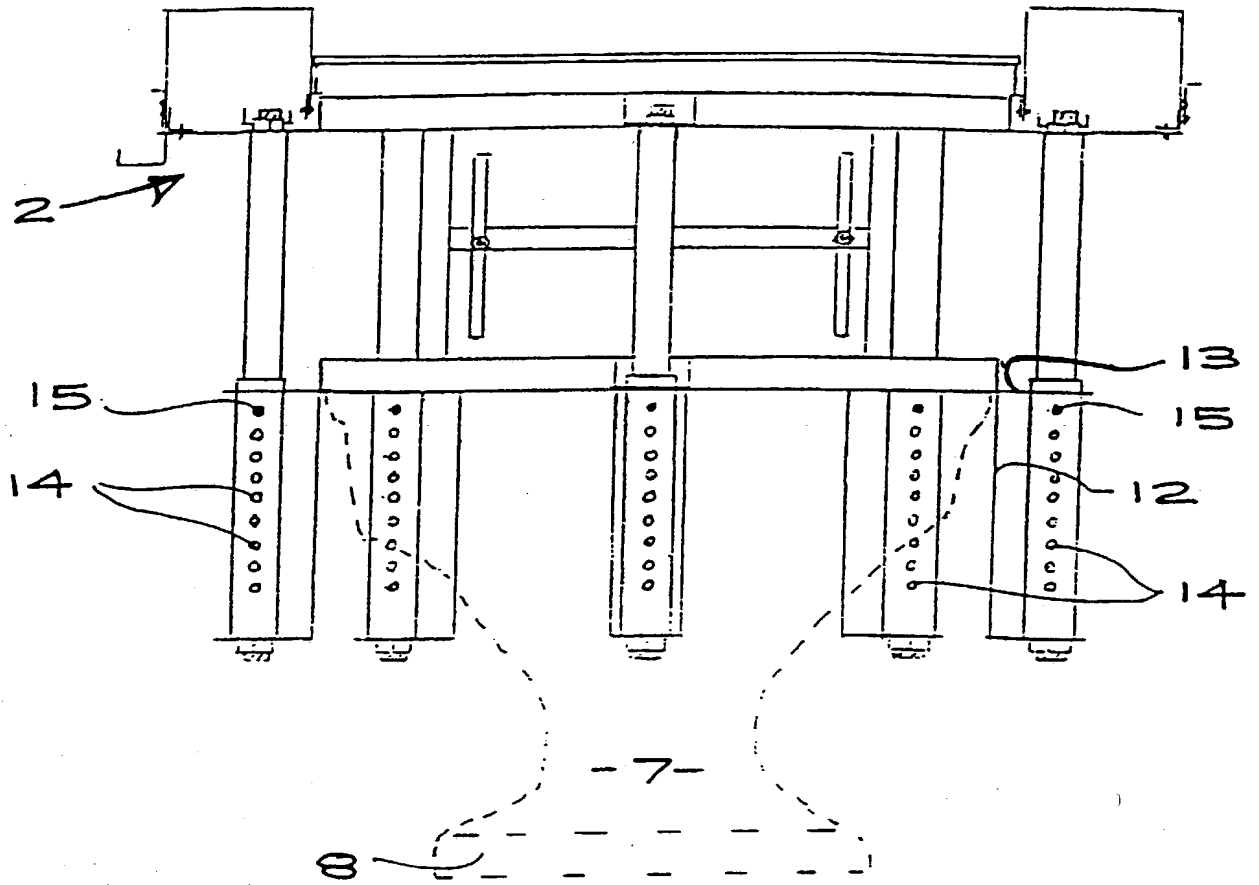


FIG. 2



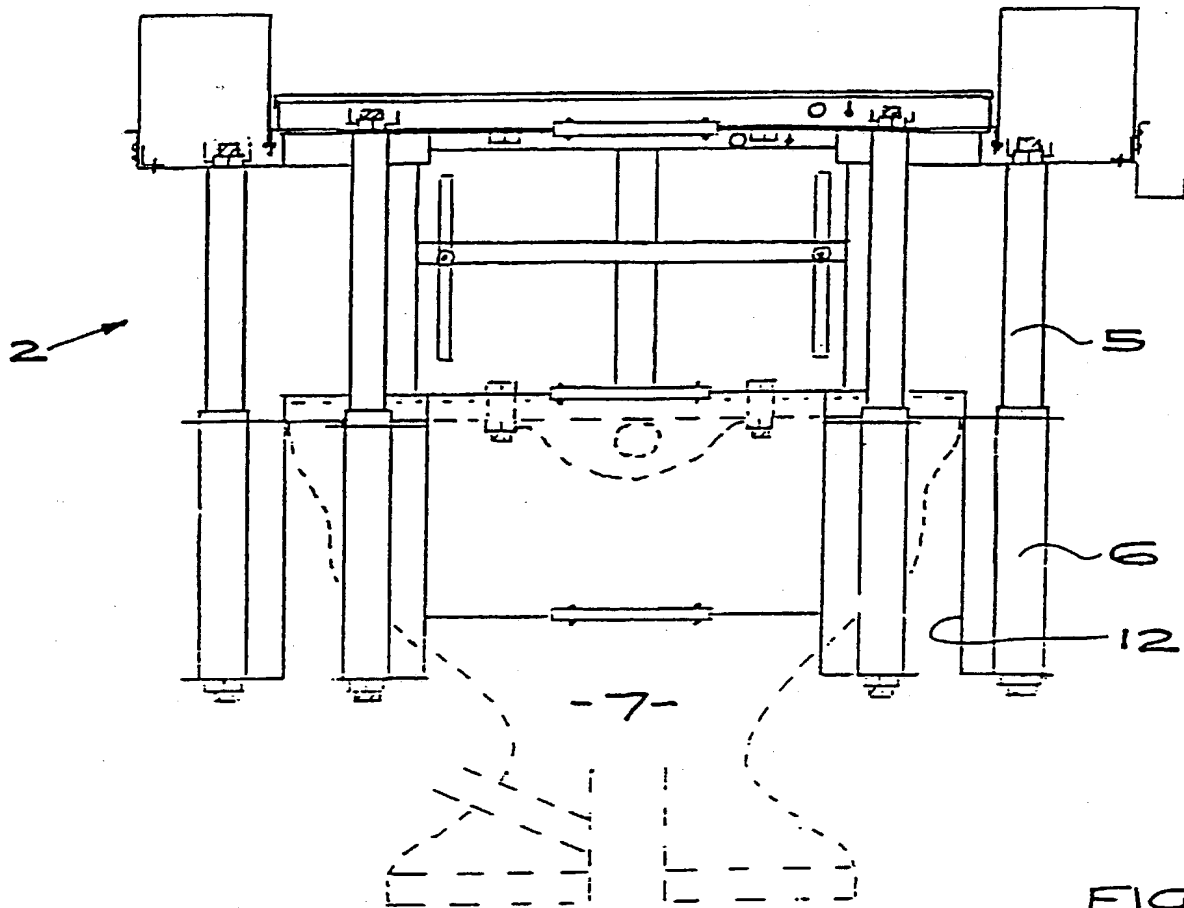


FIG. 5

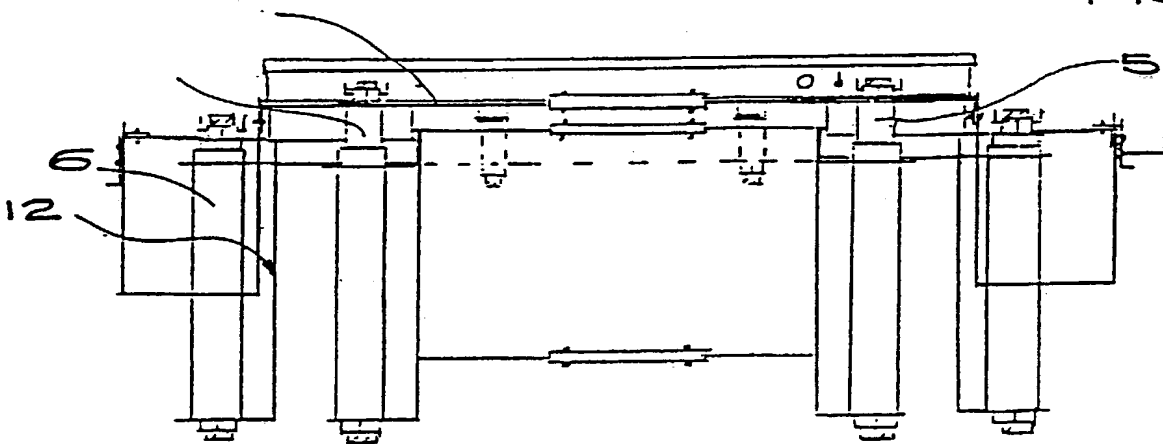


FIG. 6

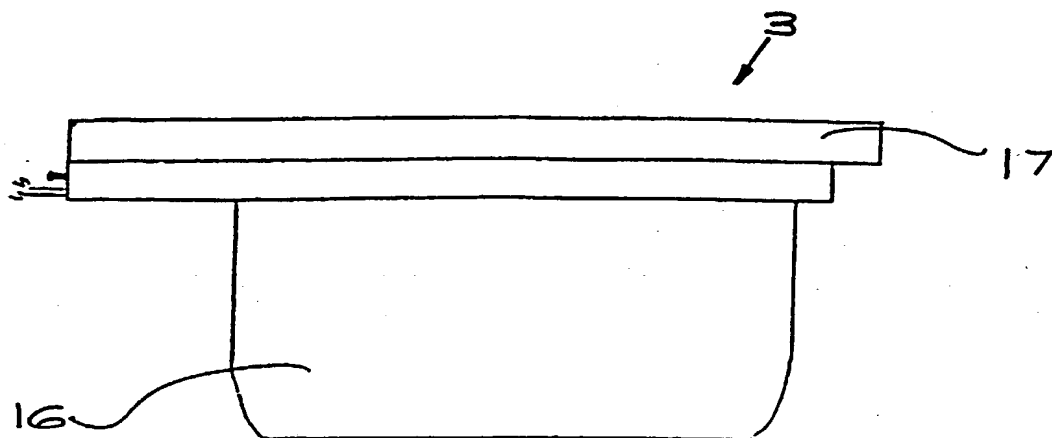


FIG. 7

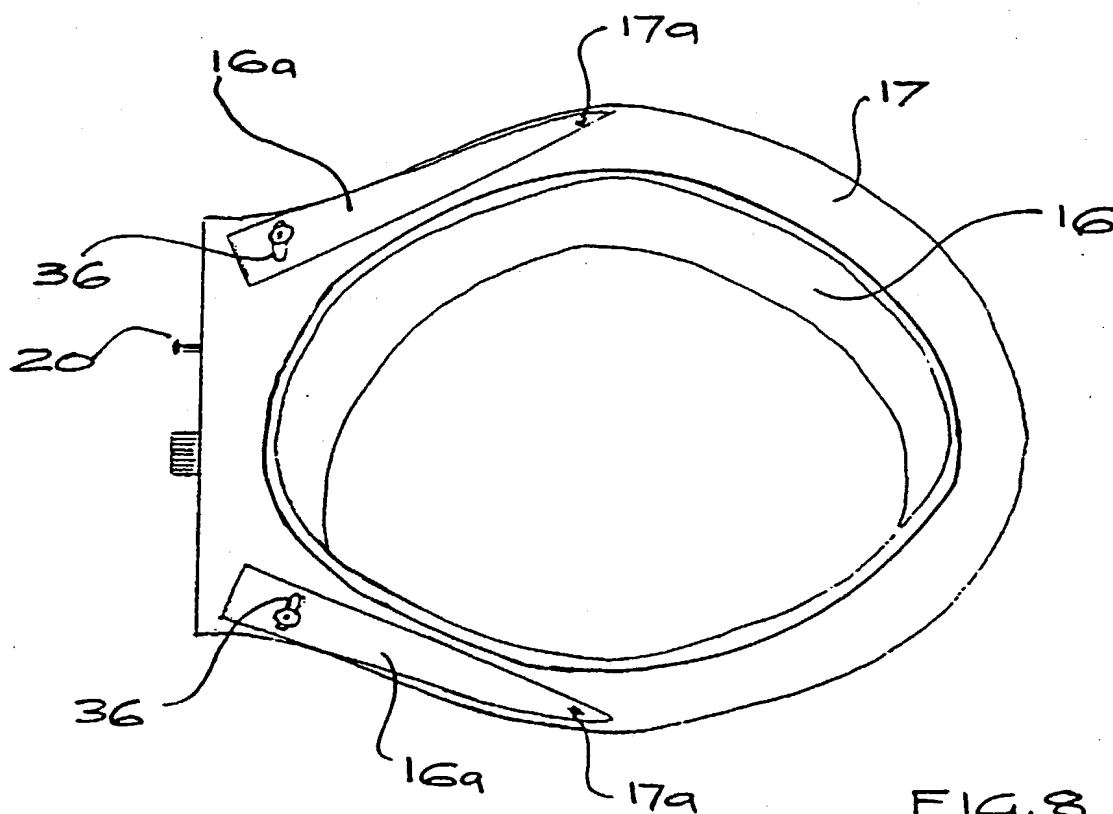


FIG. 8

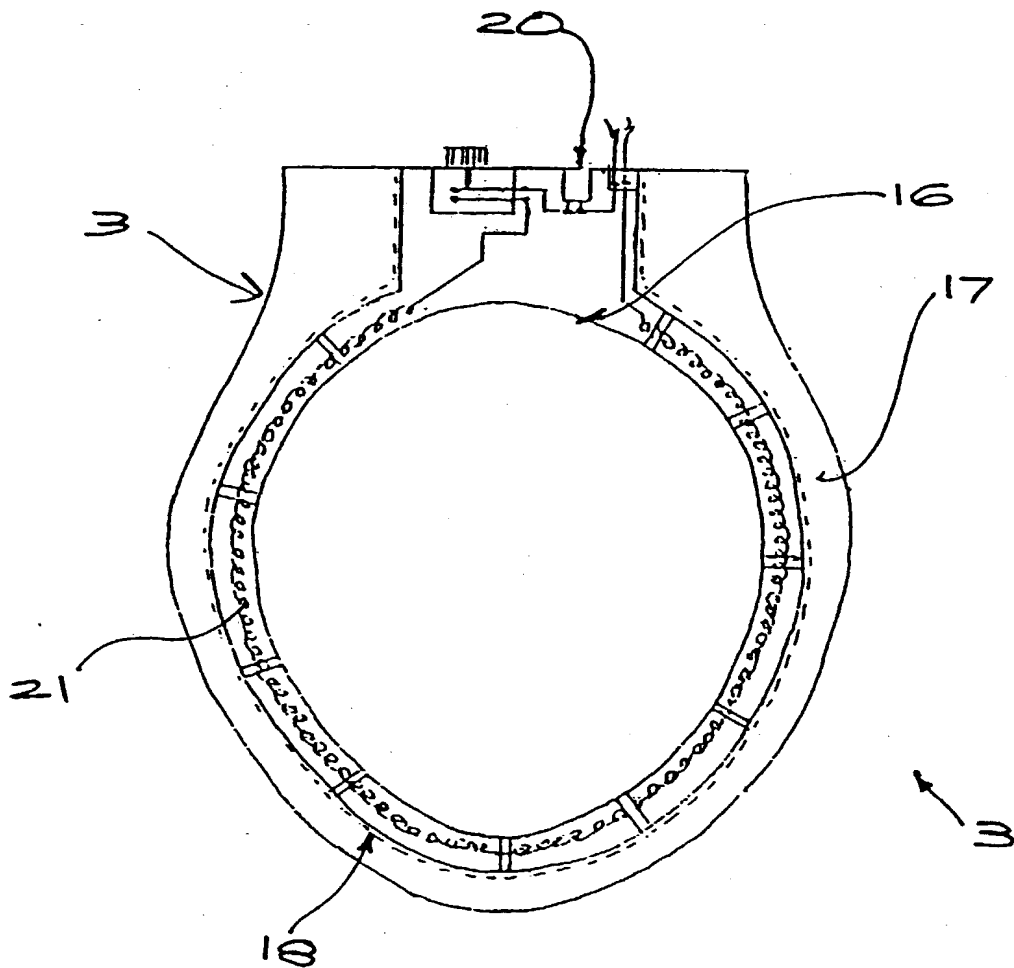


FIG. 9

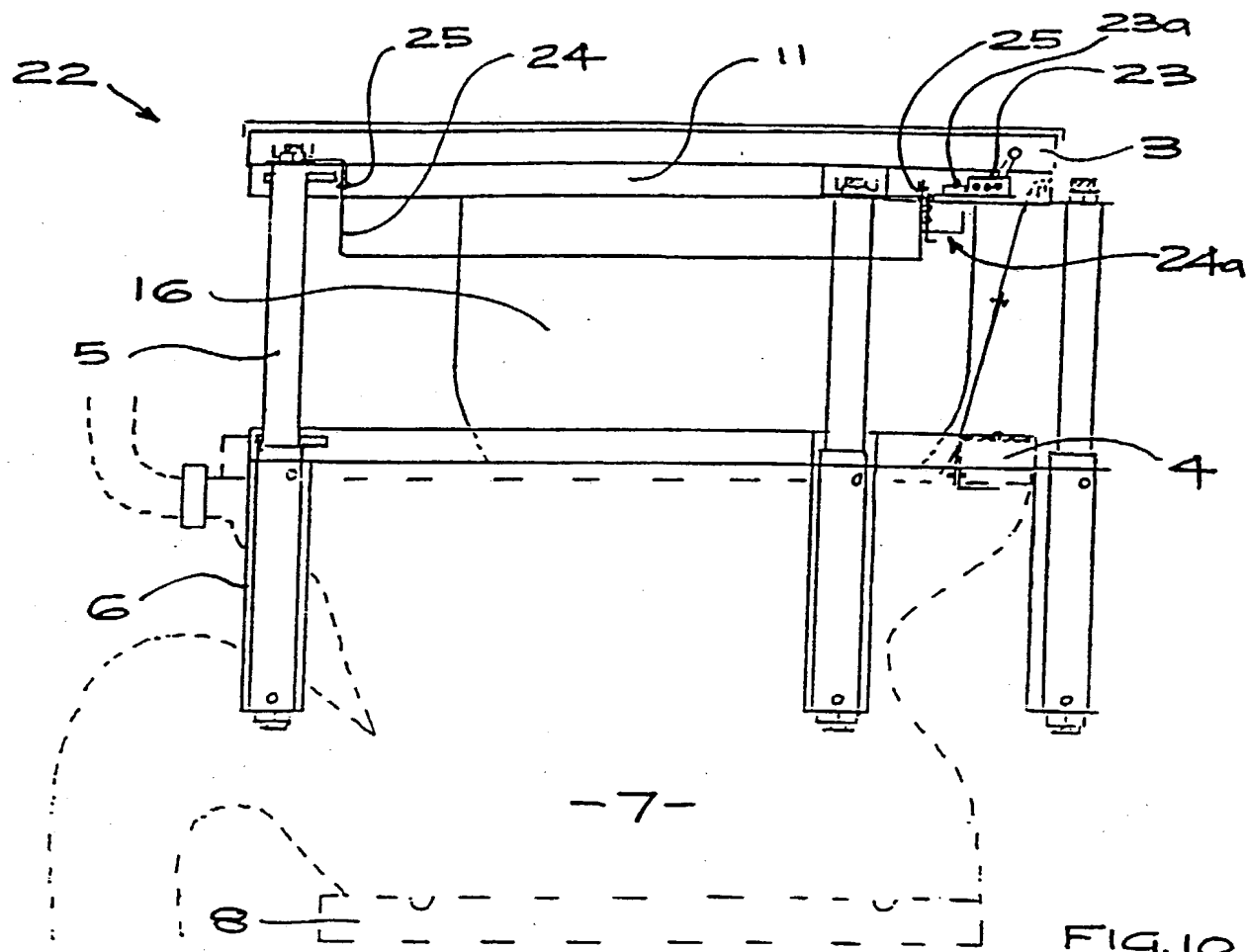


FIG. 10

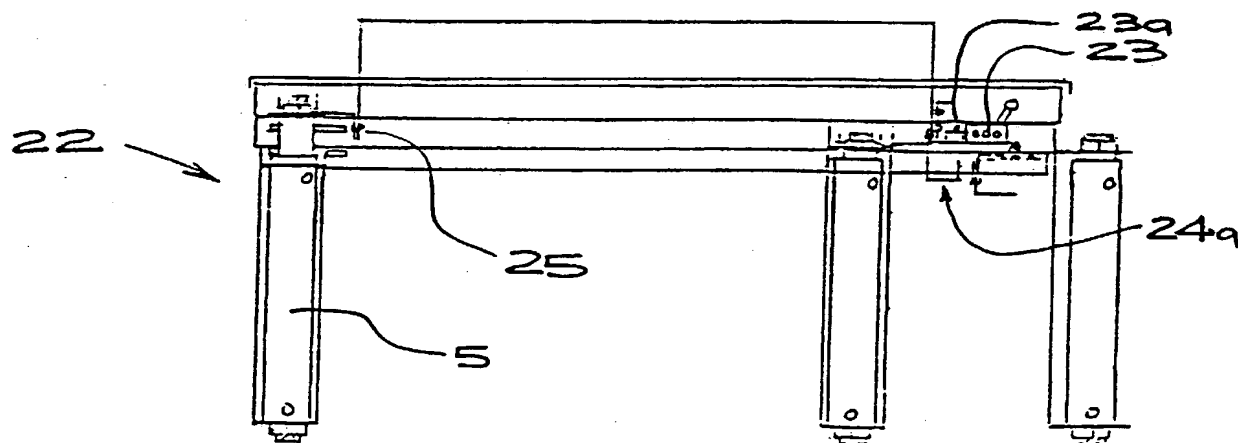


FIG. 11

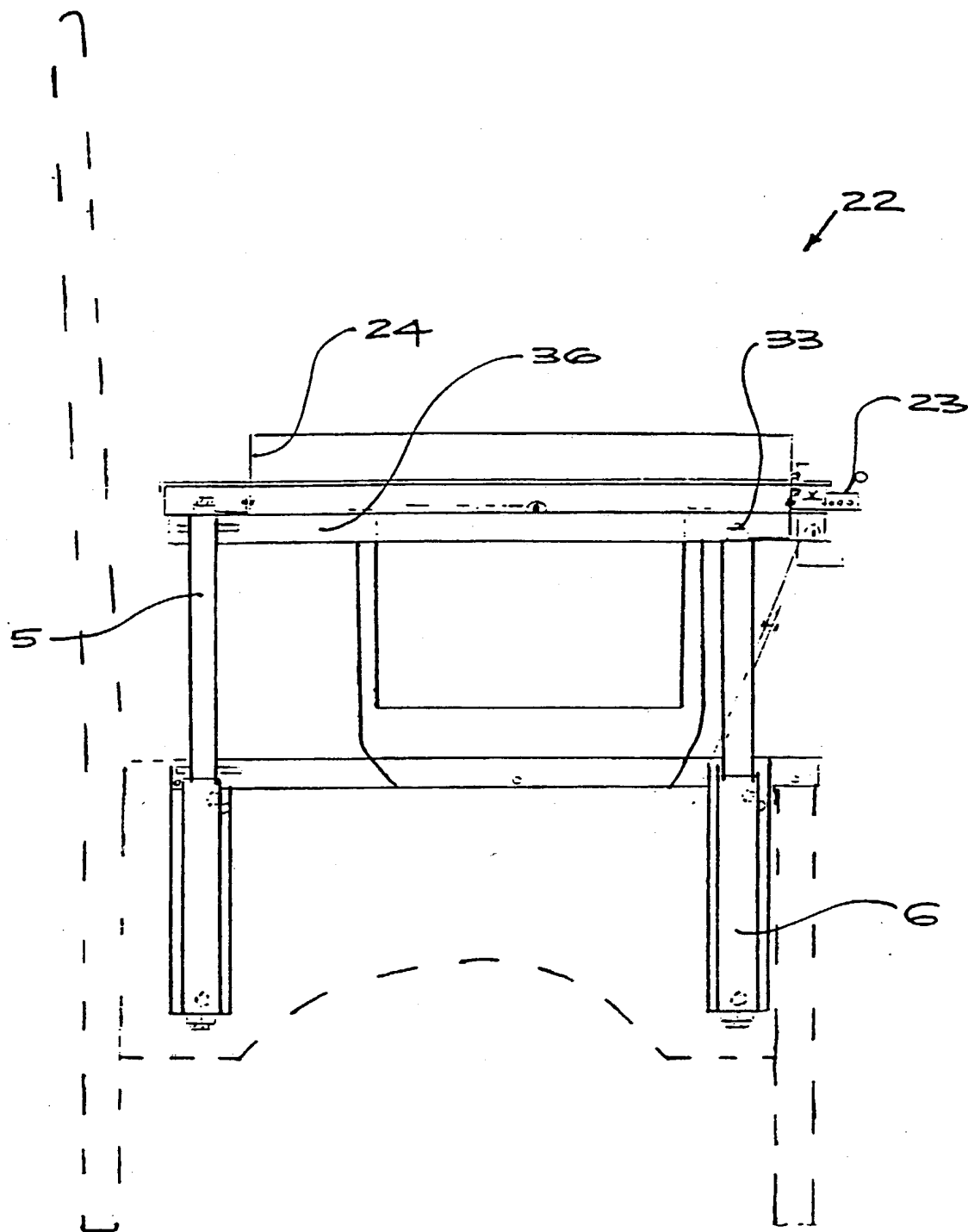


FIG. 12

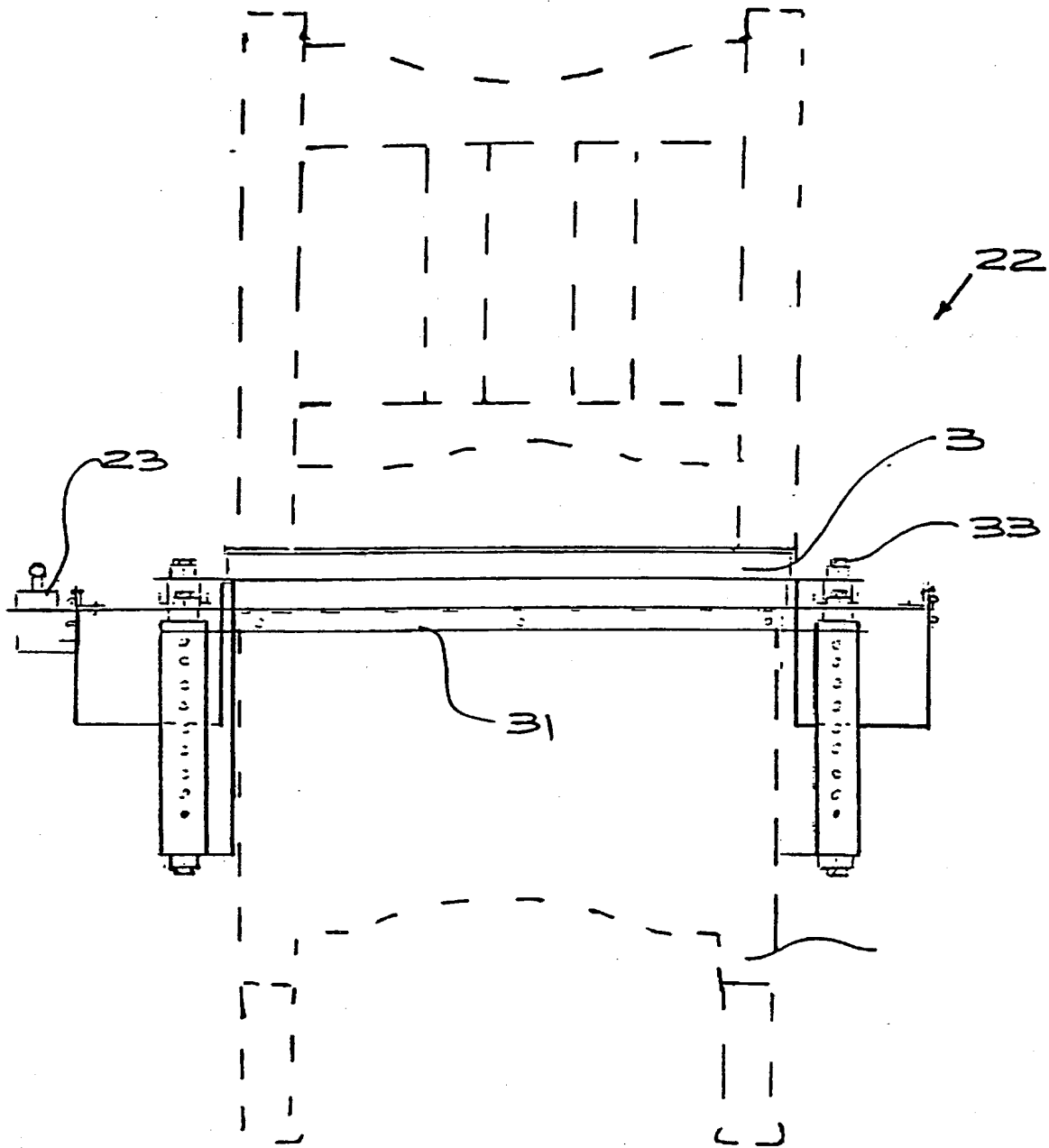


FIG.13

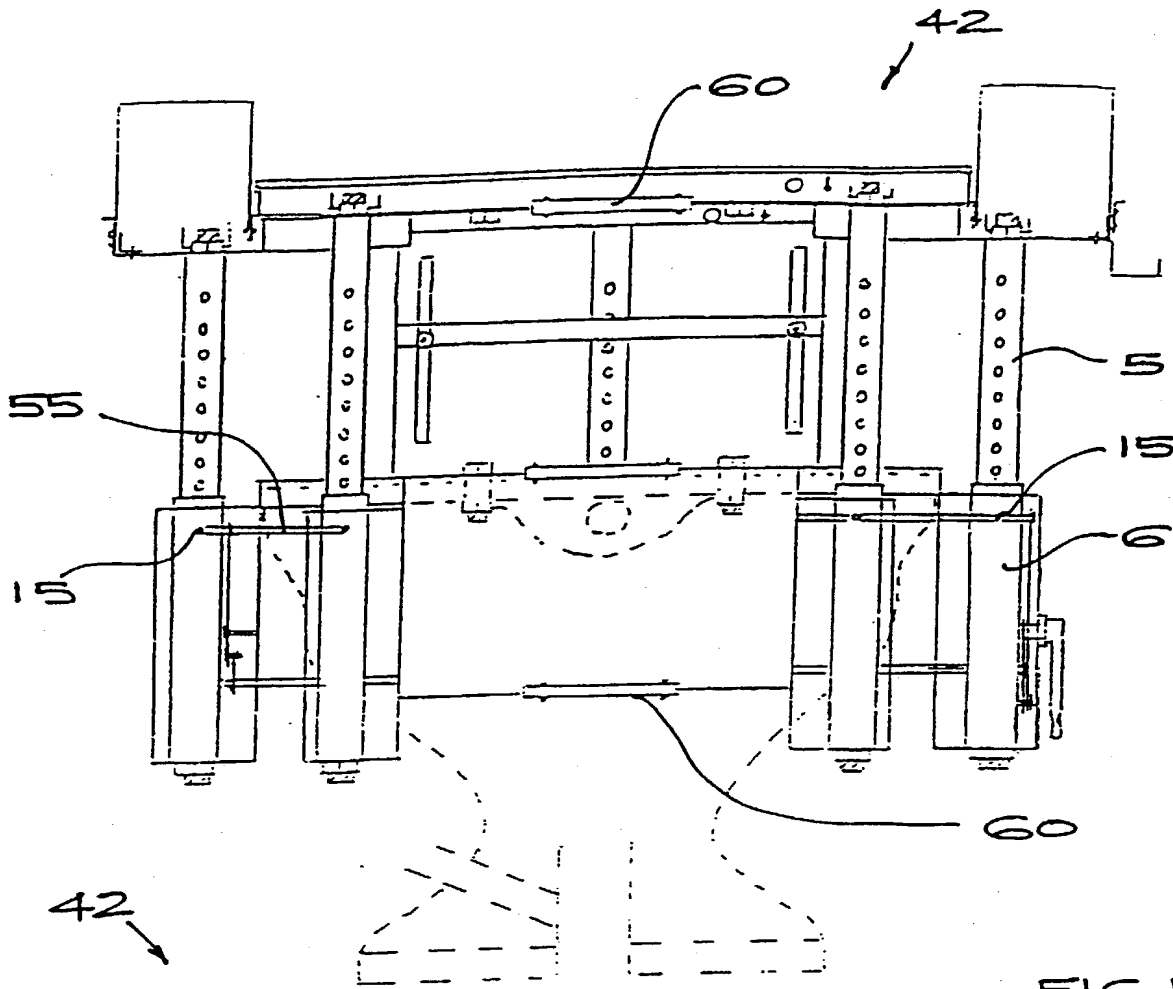


FIG. 14

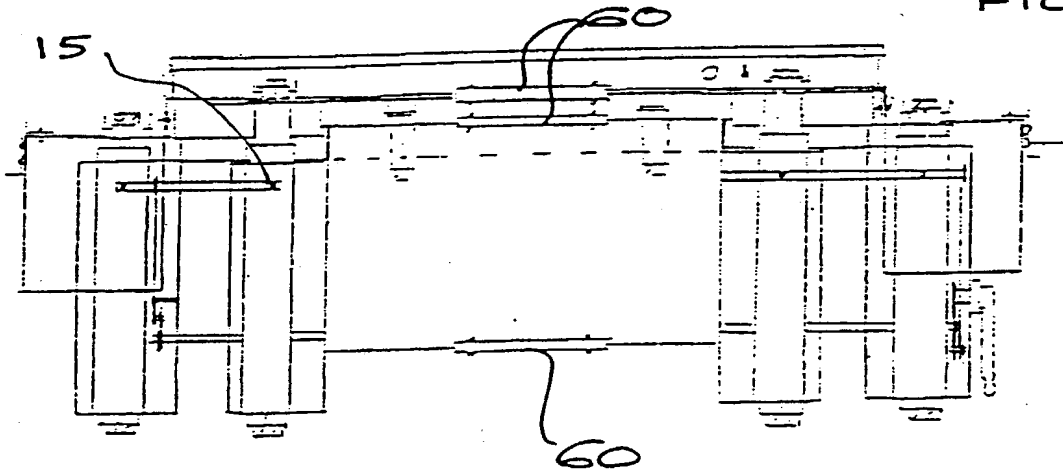


FIG. 15

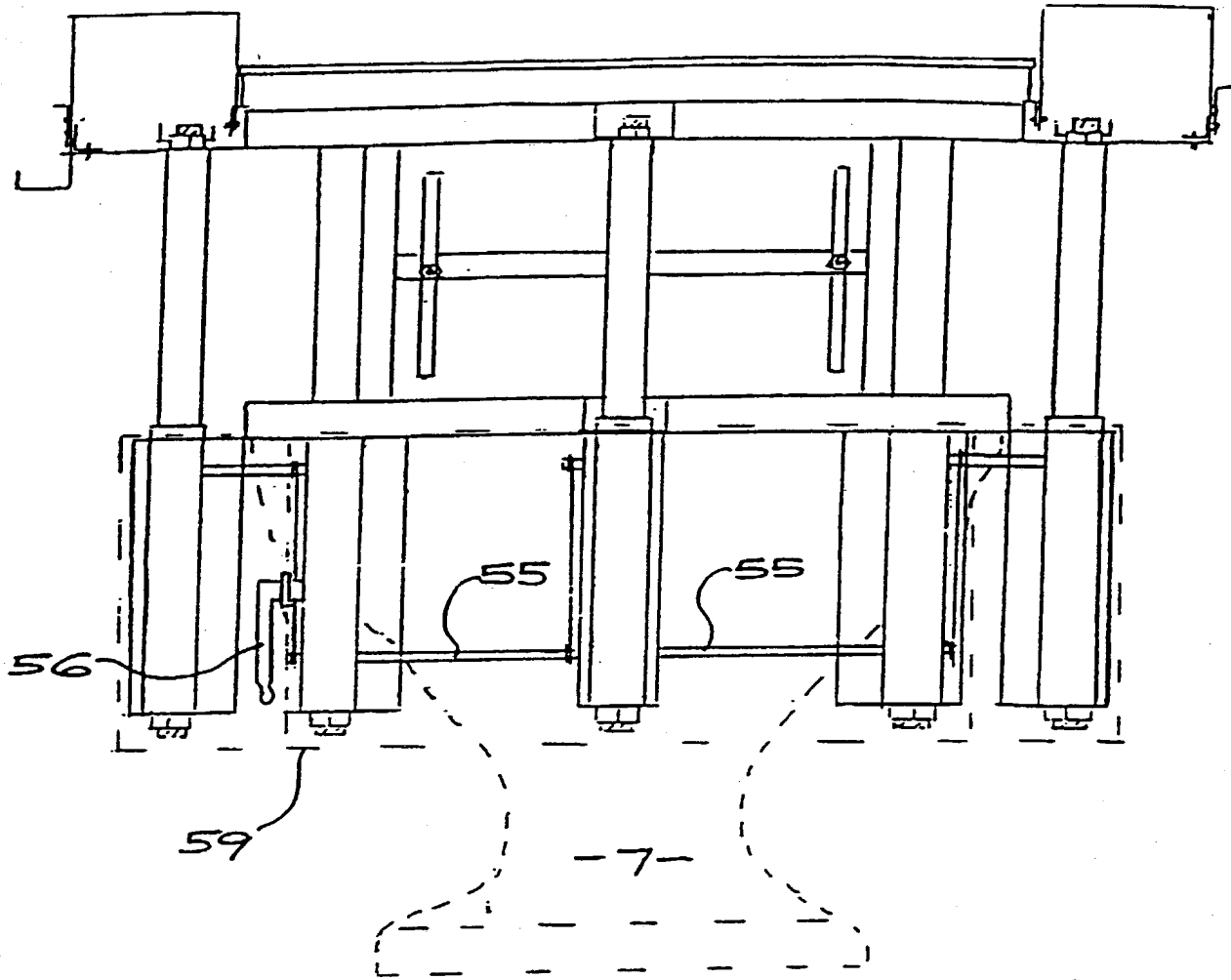


FIG. 16

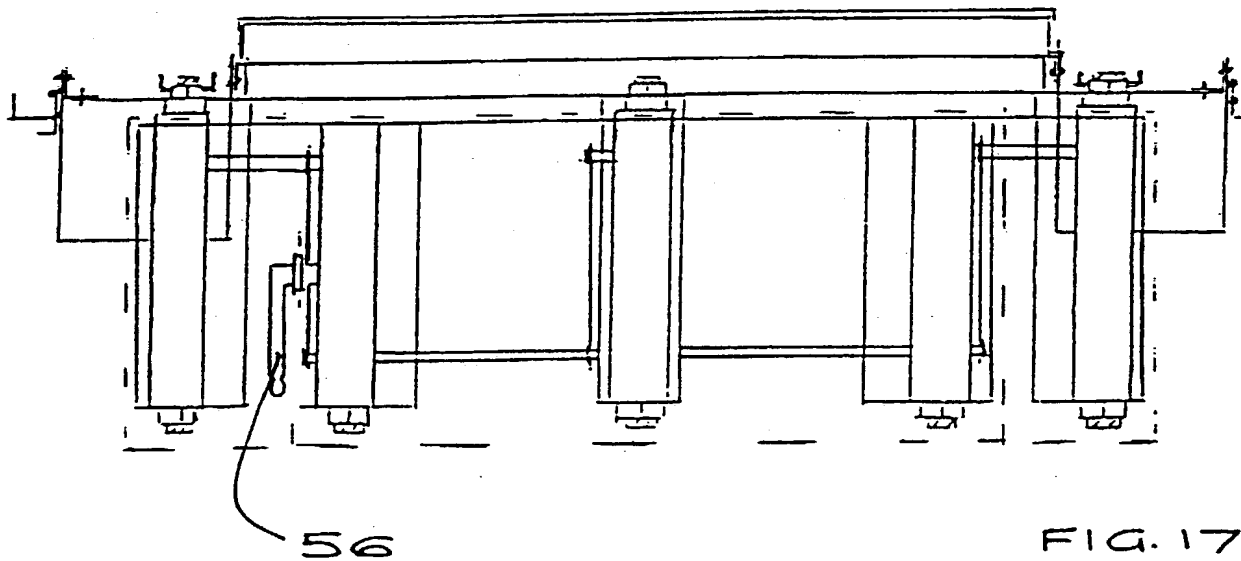
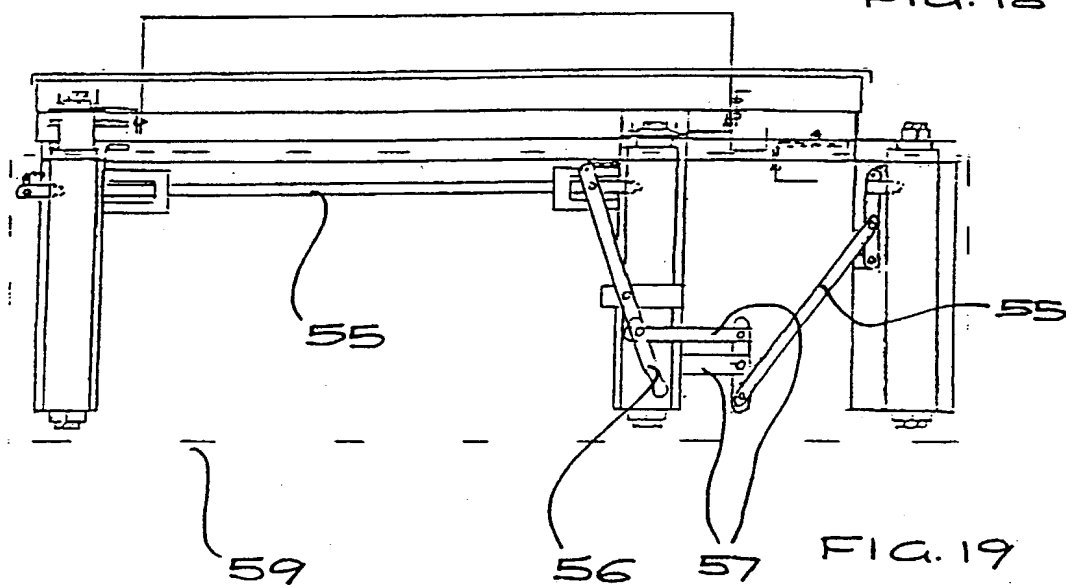
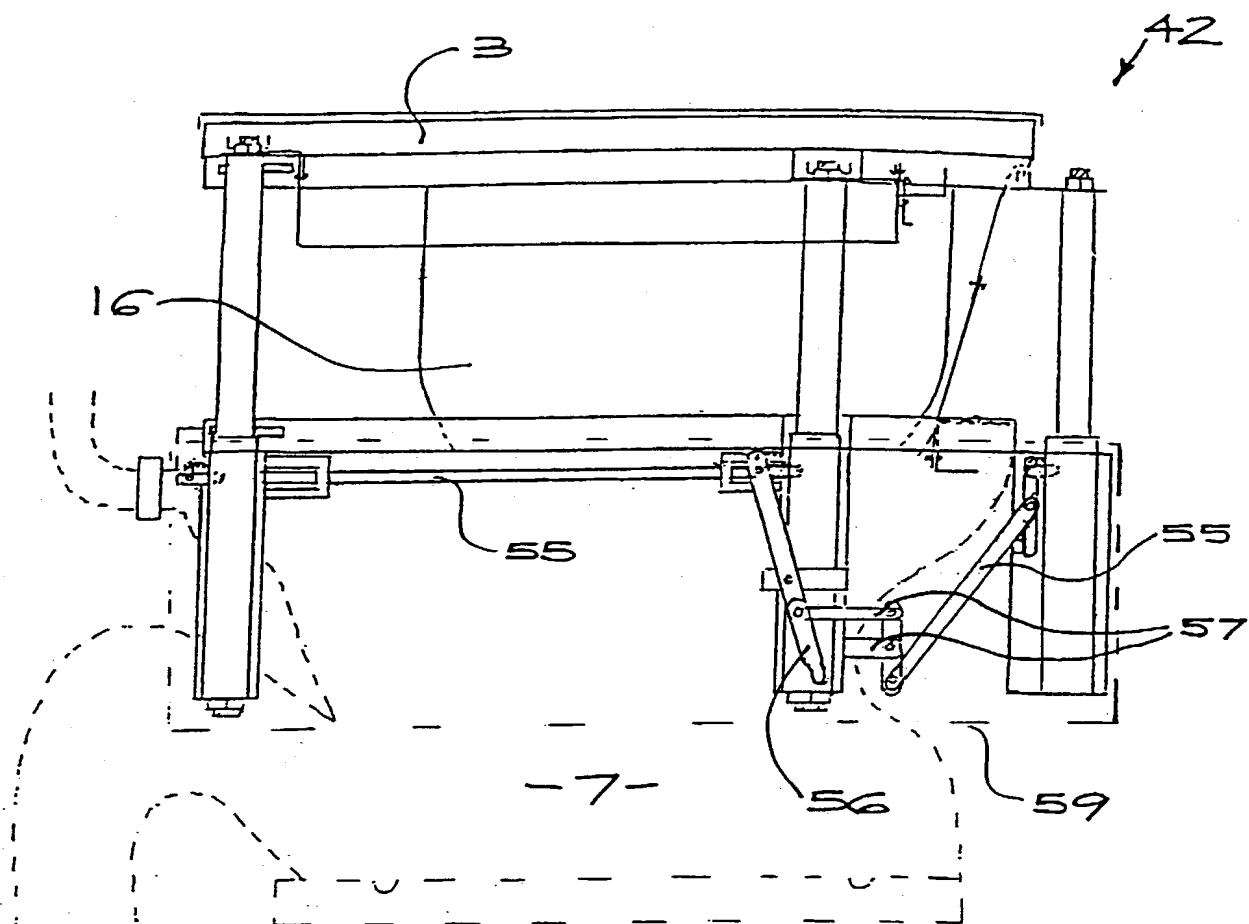
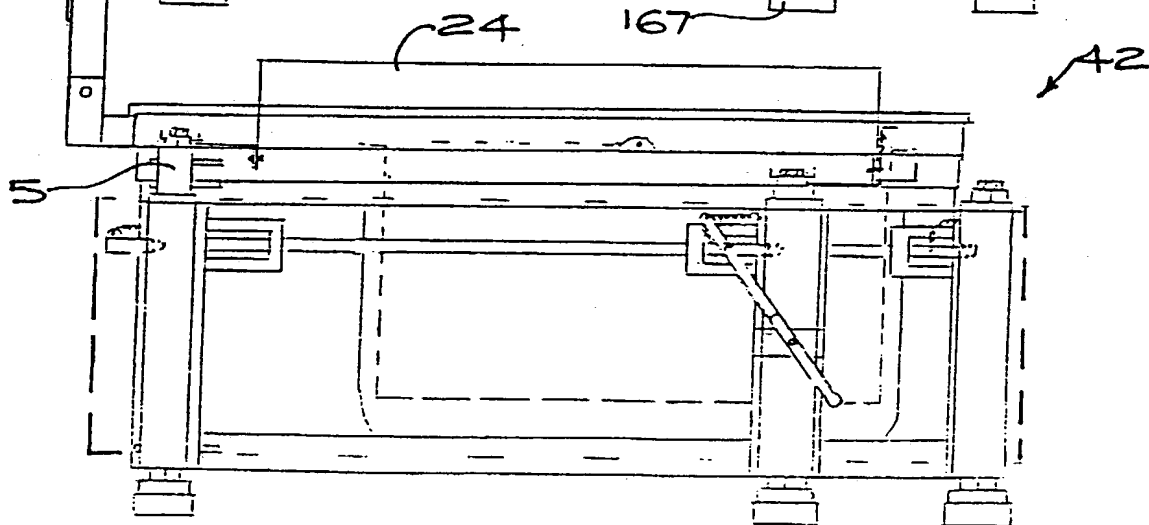
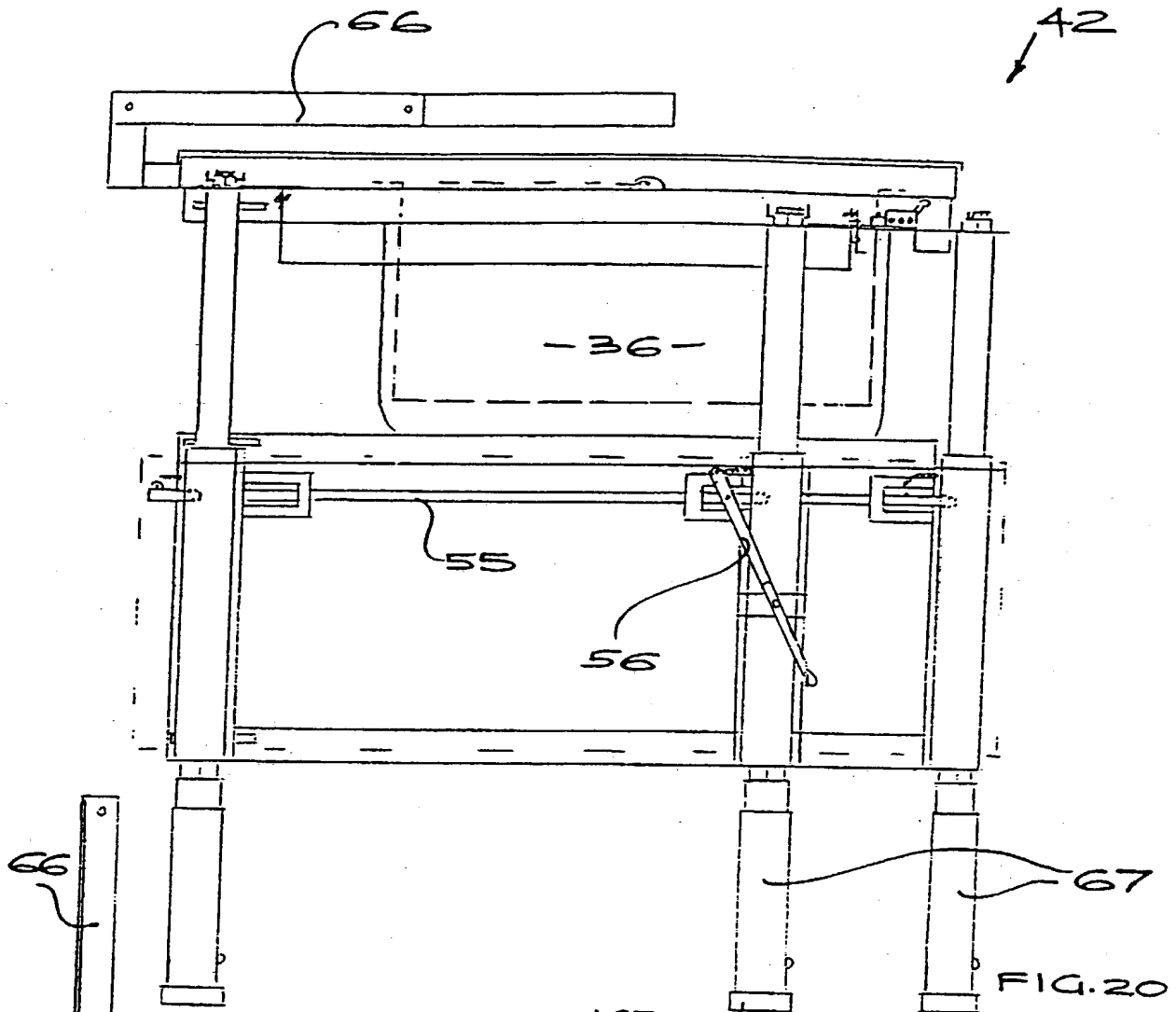


FIG. 17





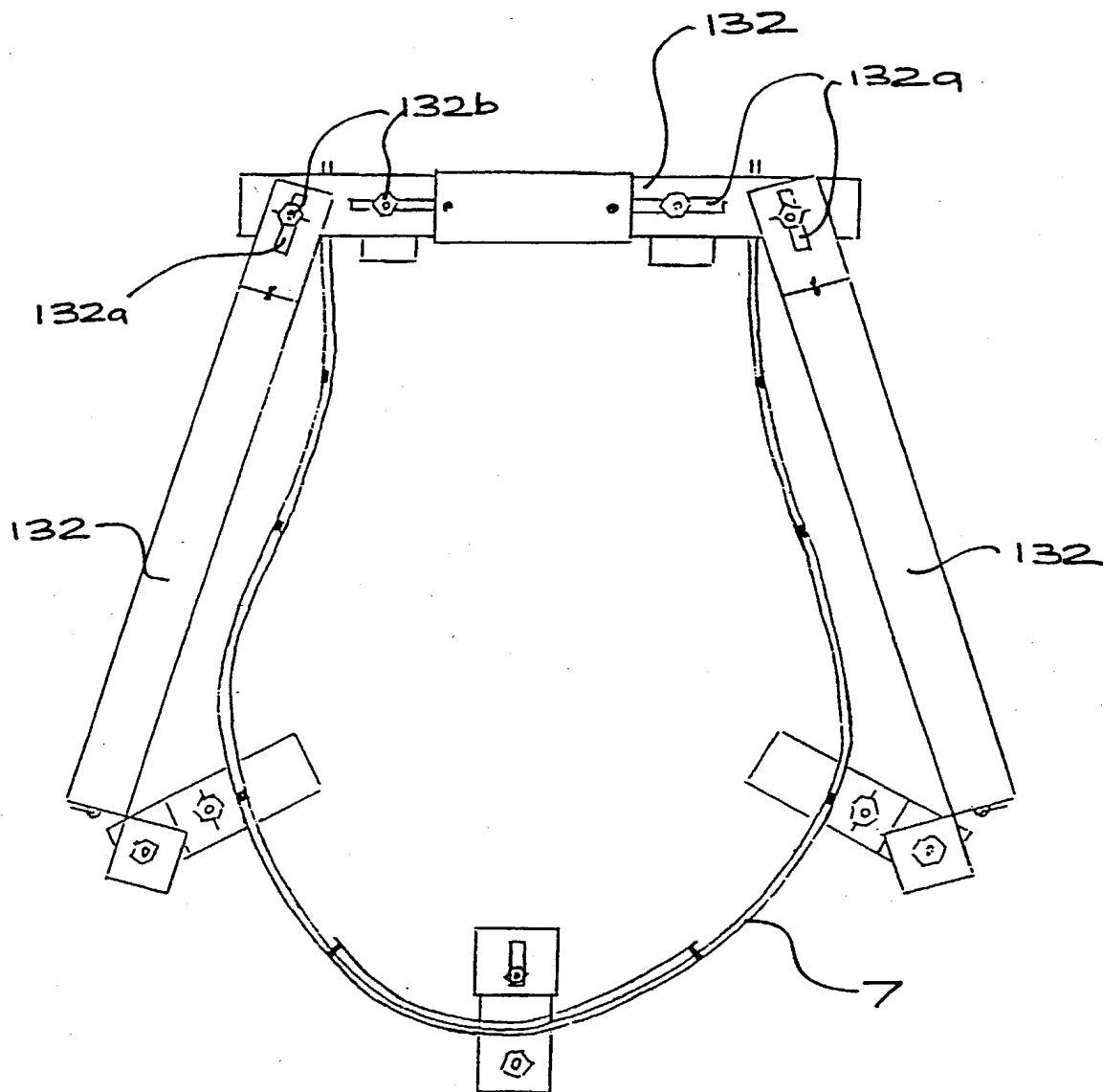


FIG. 22

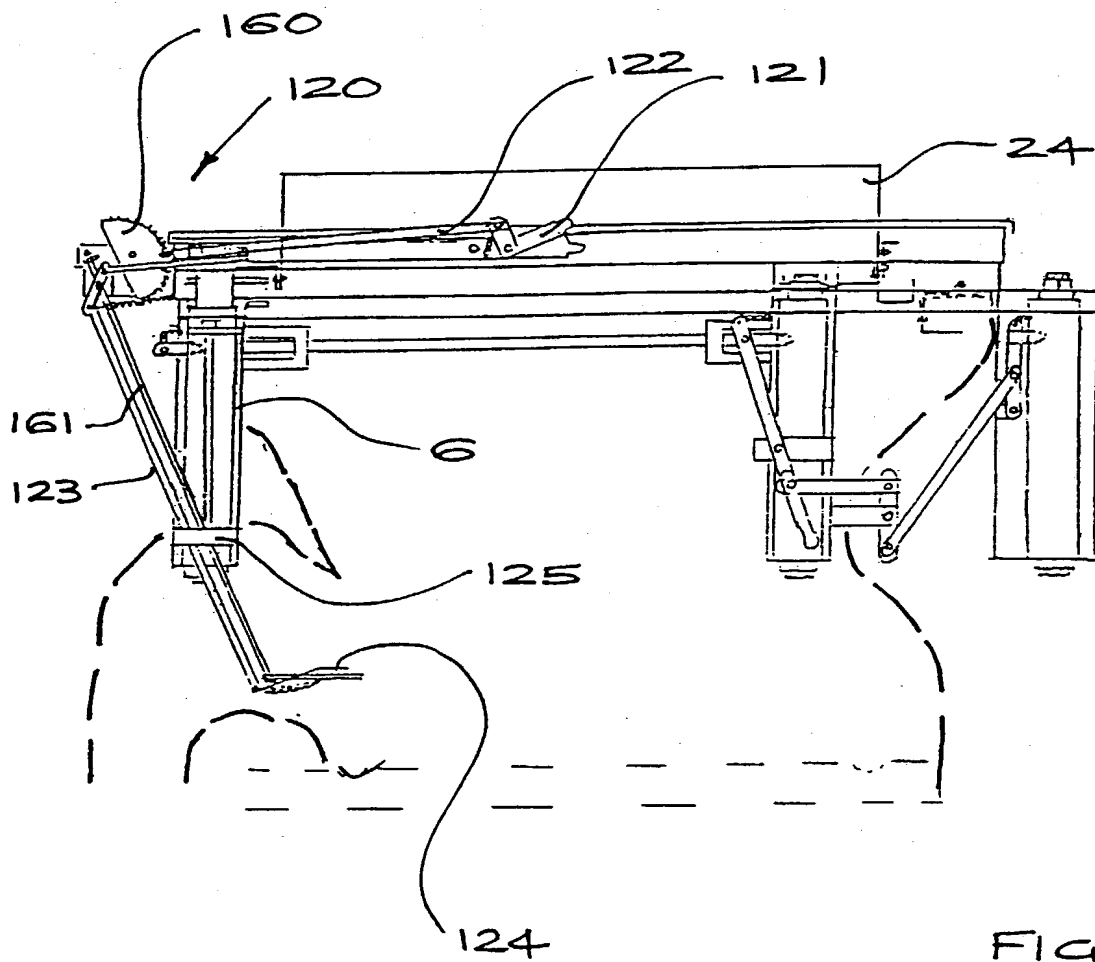


FIG. 23

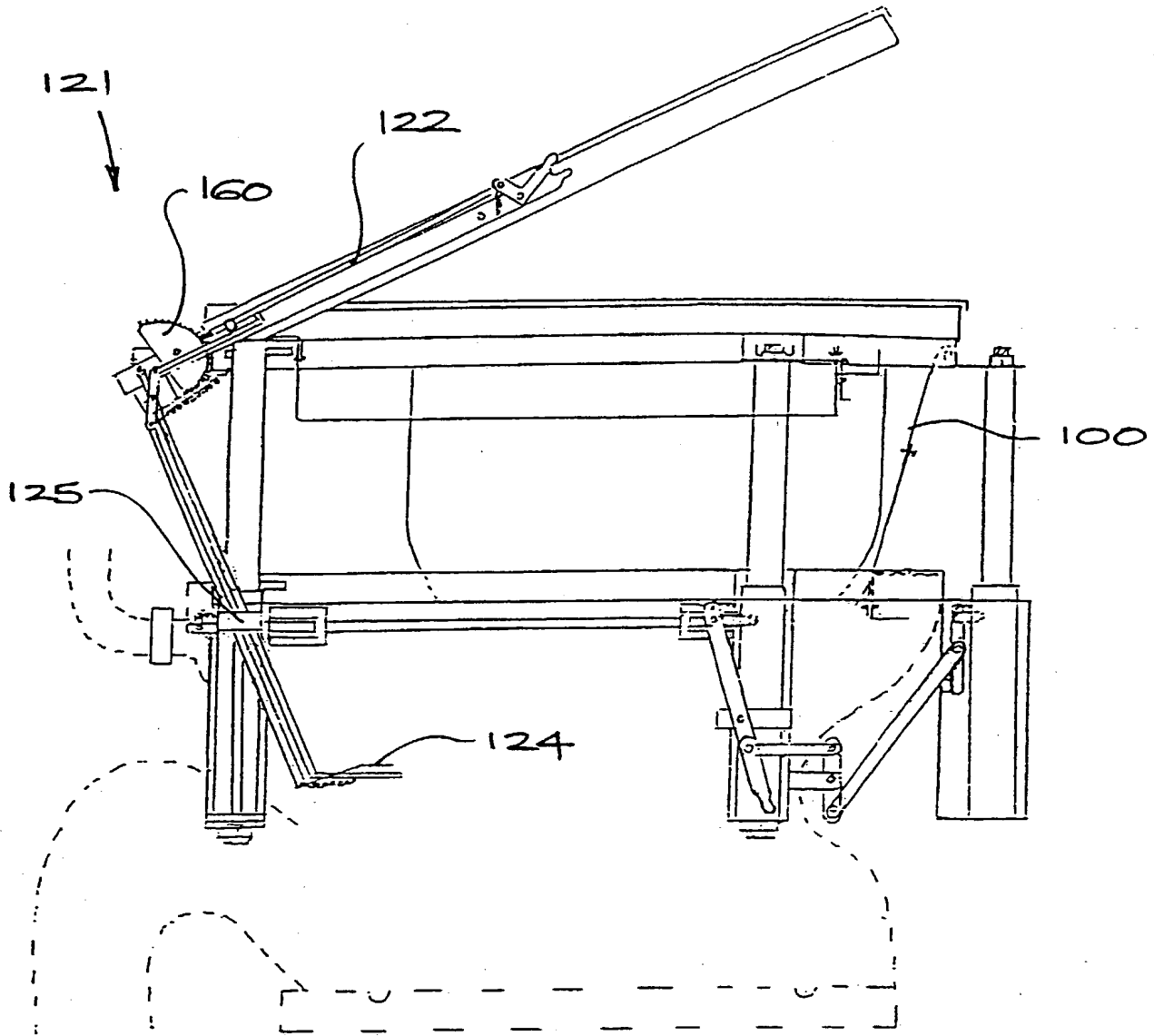


FIG. 24

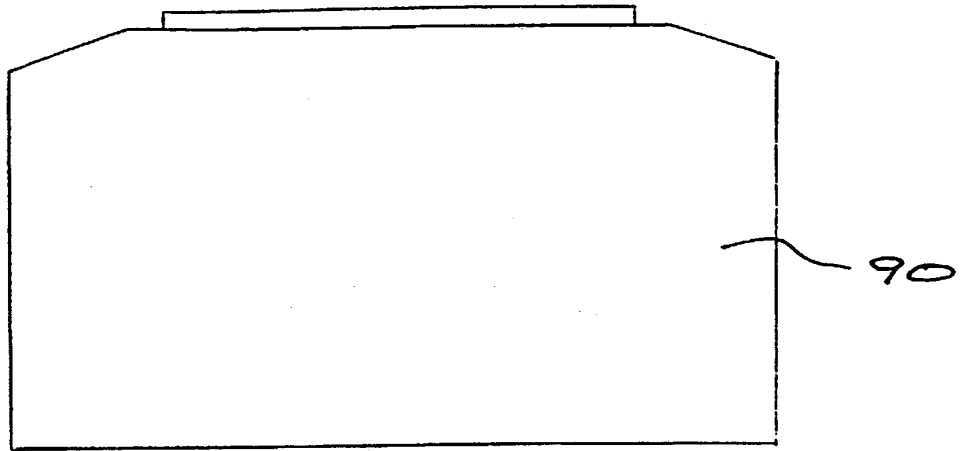


FIG. 25a

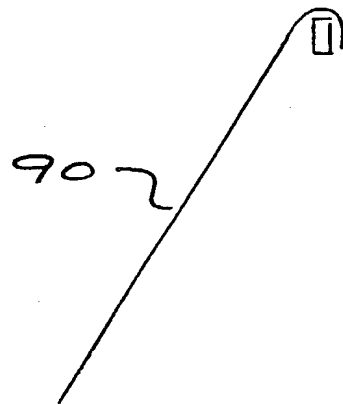


FIG. 25b



FIG. 25c

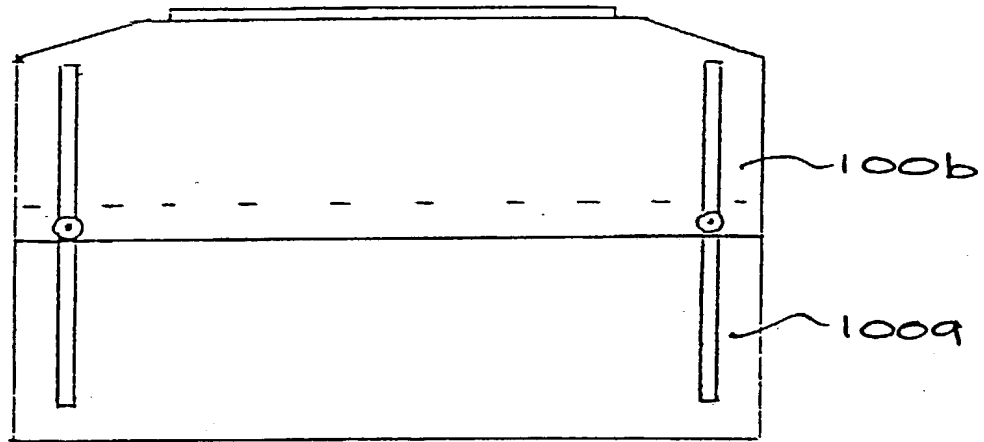


FIG. 26a

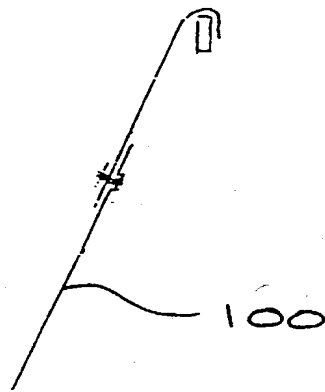


FIG. 26b

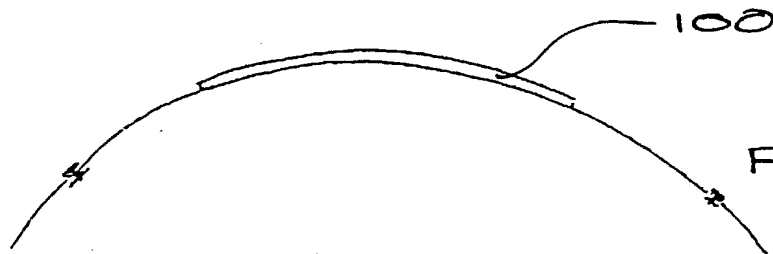
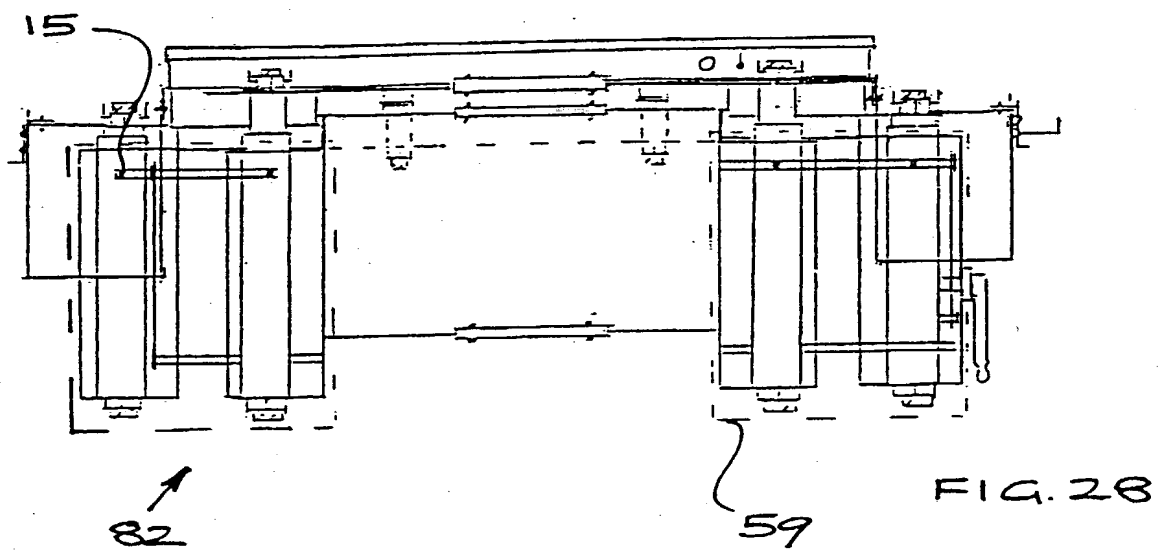
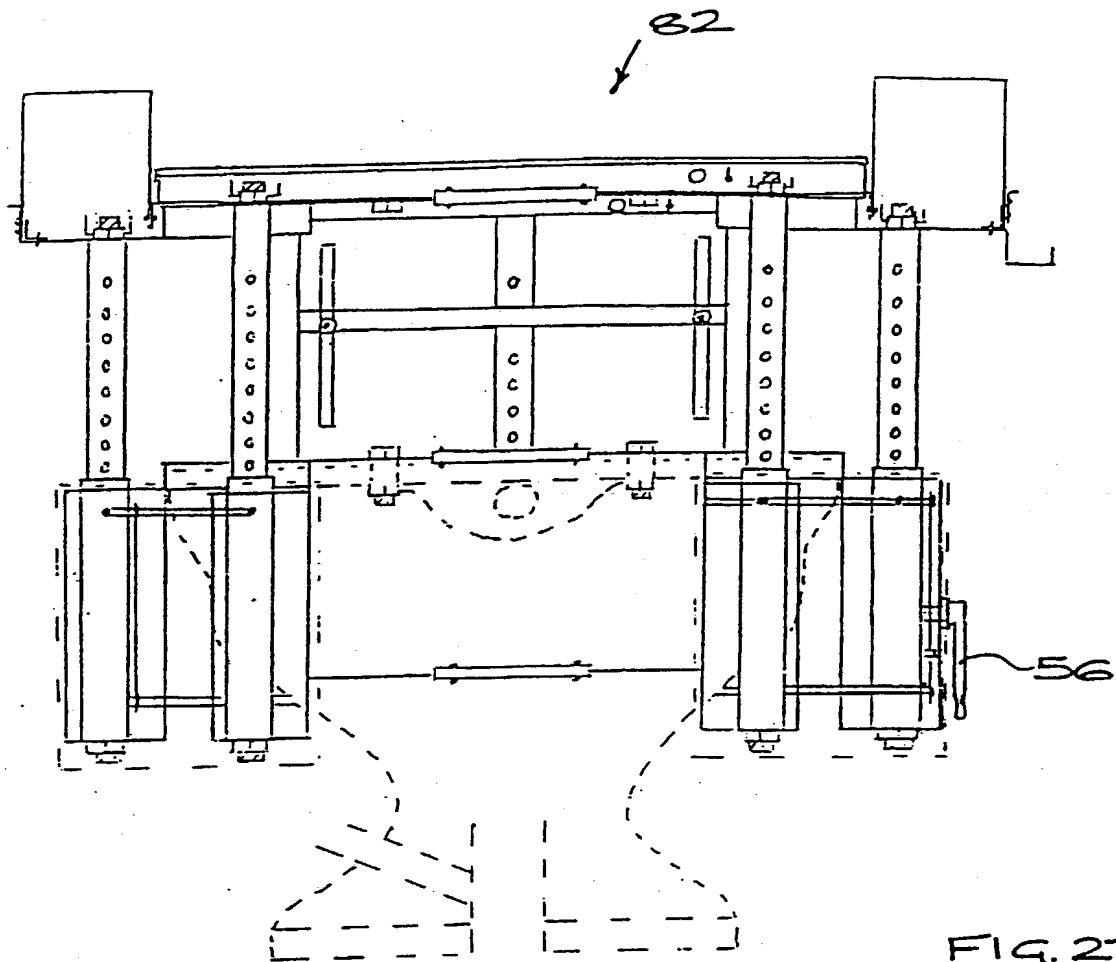
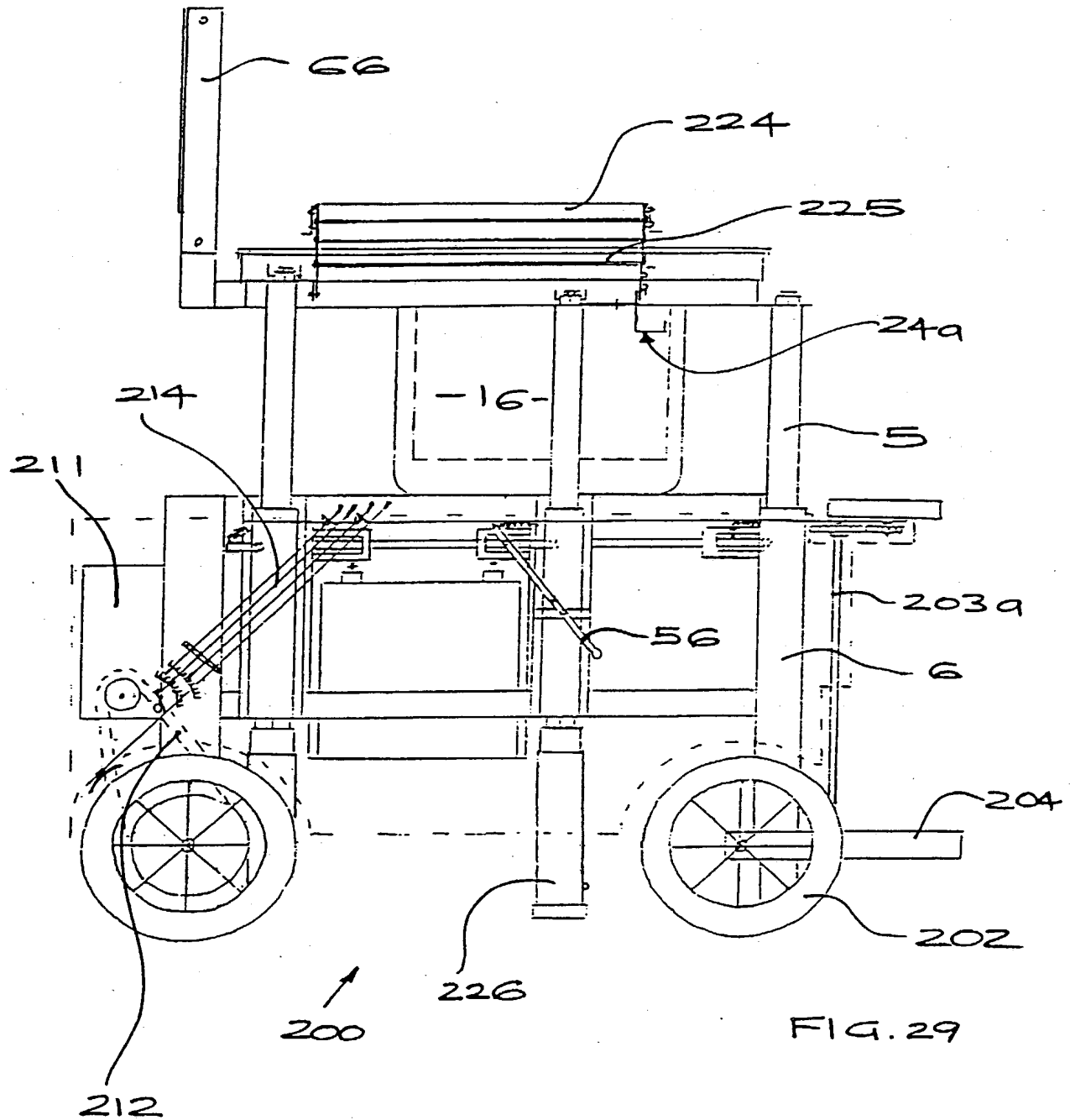


FIG. 26c





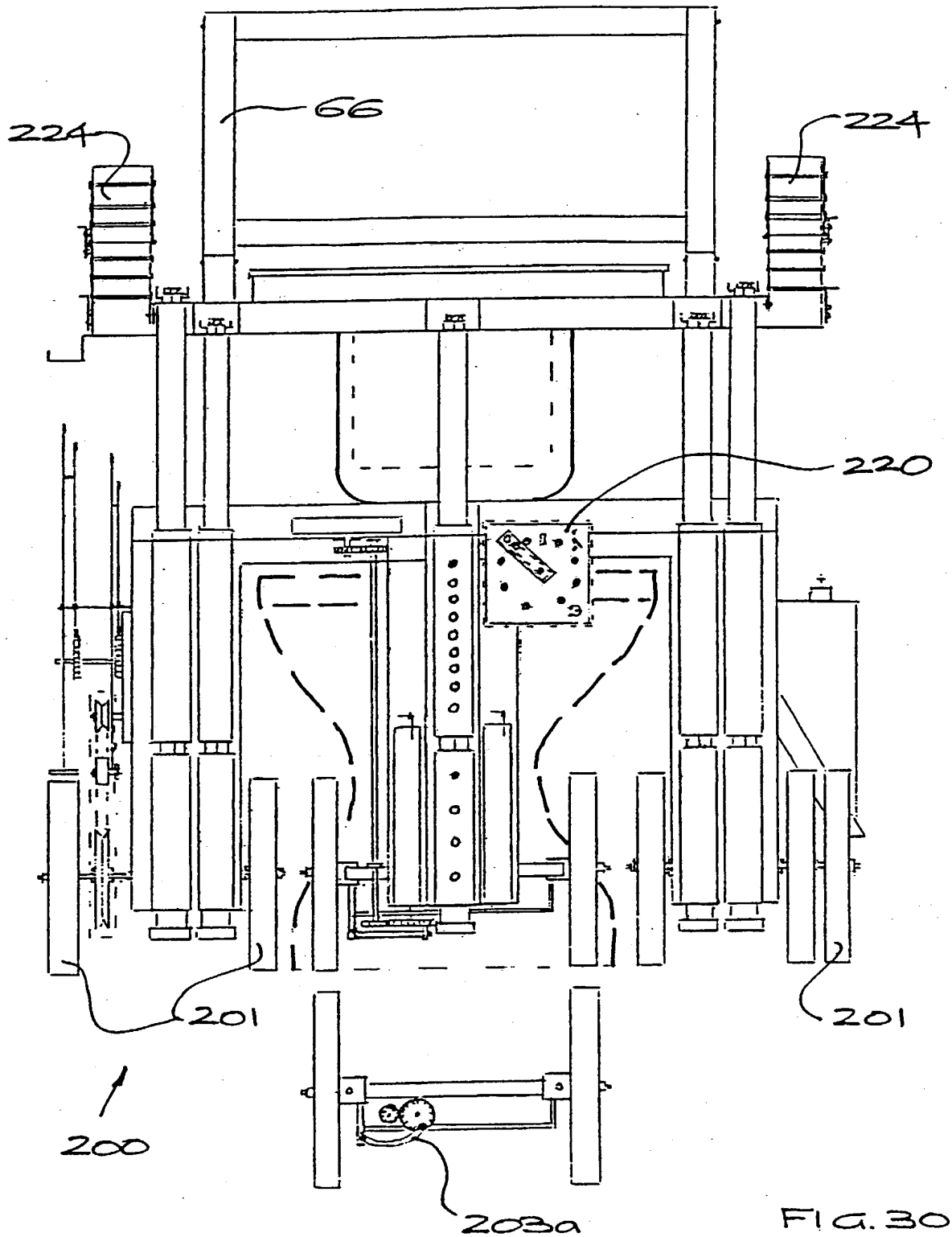


FIG. 30

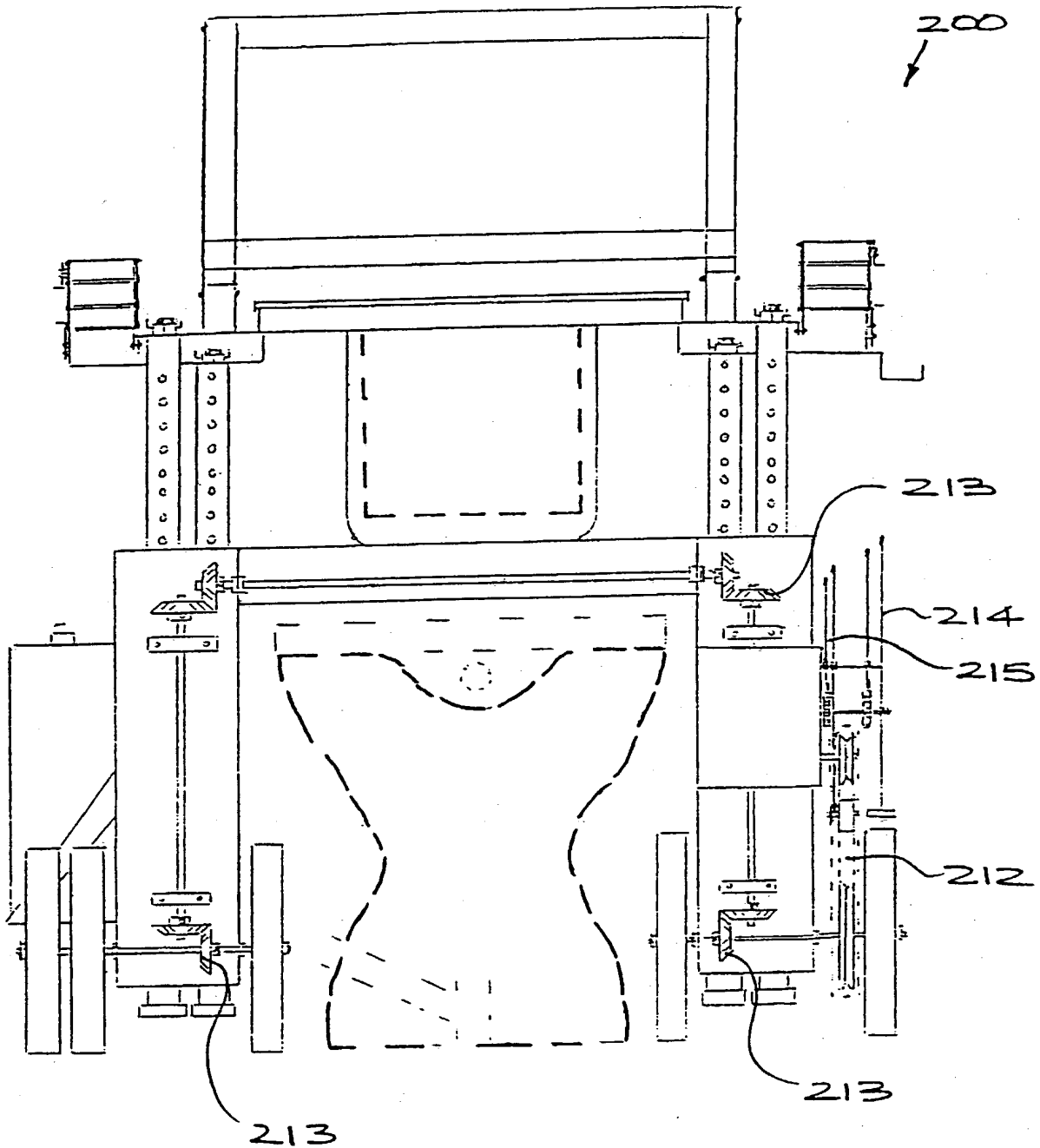


FIG. 3

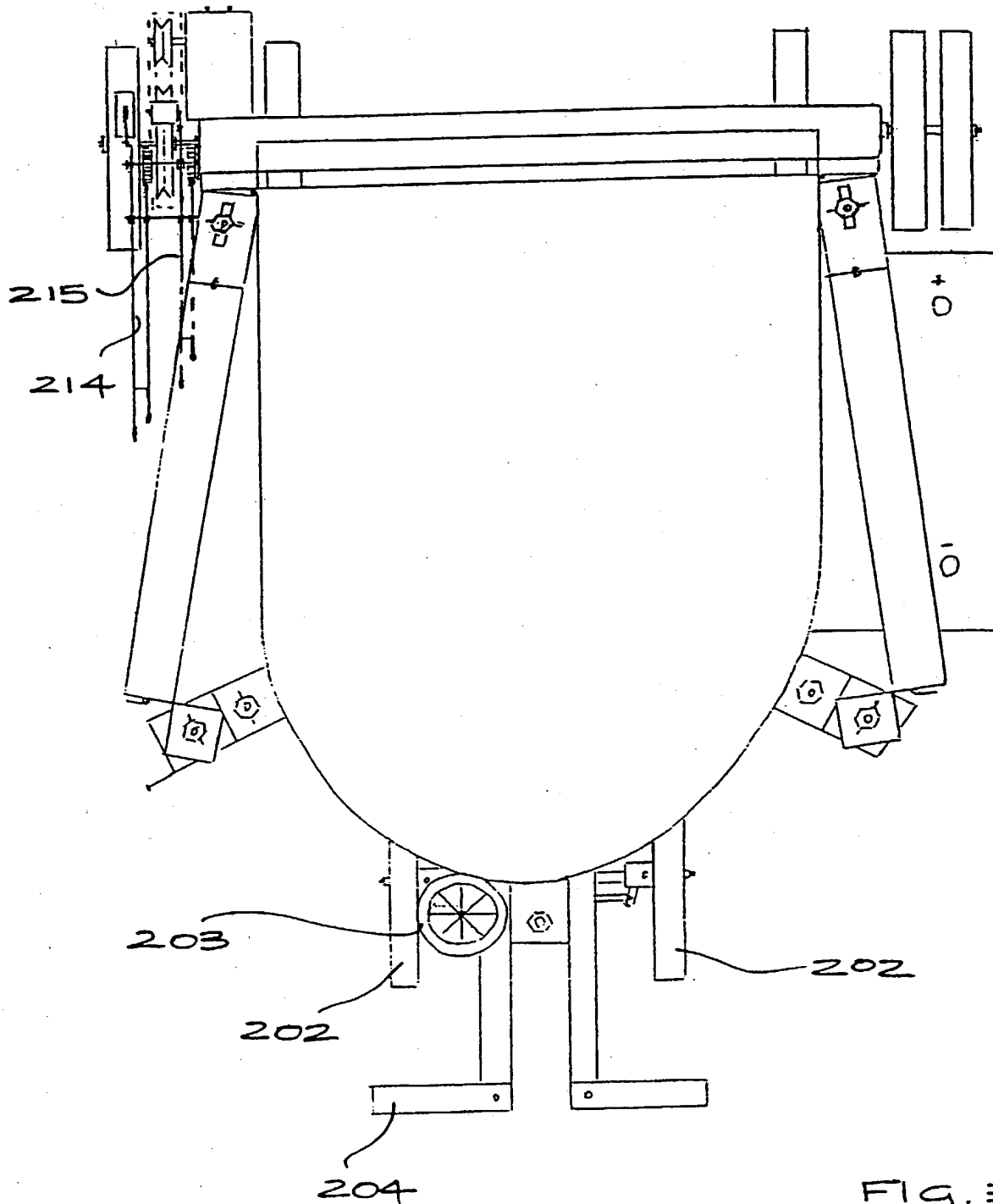


FIG. 32

DECLARATION - USA PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled ADJUSTABLE ELEVATING TOILET SEAT the specification of which:

- (a) ☐ is attached hereto; or
- (b) ☒ was filed on February 28, 2002 as Application No. 10/070602 or Express Mail No., as Application No. not yet known _____ and was amended on _____ (if applicable); or
- (c) ☐ was described and claimed in PCT International Application No. _____ filed on _____ and as amended under PCT Article 19 on _____ (if any) and/or under PCT Article 34 on _____ (if any).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above;

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56;

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent, design or inventor's certificate or any PCT international application(s) listed below and have also identified below any foreign application(s) for patent, design or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed for the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN APPLICATION(S)

| COUNTRY (OR INDICATE IF PCT) | APPLICATION NUMBER | DATE OF FILING (day, month, year) | PRIORITY CLAIMED UNDER 37 U.S.C. § 119 | |
|------------------------------|--------------------|-----------------------------------|--|--------------------------|
| New Zealand ✓ | 337475 ✓ | August 30, 1999 ✓ | X YES | NO <input type="radio"/> |
| PCT | PCT/NZ00/00170 ✓ | August 30, 2000 ✓ | X YES | NO <input type="radio"/> |
| | | | <input type="radio"/> YES | NO <input type="radio"/> |
| | | | <input type="radio"/> YES | NO <input type="radio"/> |
| | | | <input type="radio"/> YES | NO <input type="radio"/> |

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below, and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Prior U.S.A. Application(s)

Application No.: _____ Filing Date: _____ Status: _____

POWER OF ATTORNEY: I hereby appoint the registrants of Knobbe, Martens, Olson & Bear, LLP, 620 Newport Center Drive, Sixteenth Floor, Newport Beach, California 92660, Telephone (949) 760-0404, Customer No. 20,995.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patent issued thereon.

1-00 Full name of sole or first inventor: Stuart Earl Crispin MillerInventor's signature SEE Miller Day 30th Month June Year 2002Residence (city and country): 485 Manchester Street, Christchurch, New Zealand NZX.Citizenship: New Zealand ✓Post Office Address: Same as above

Send Correspondence To:

KNOBBE, MARTENS, OLSON & BEAR, LLP

Customer No. 20,995